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## *THIS WEEK'S NEWS*

*ENTRIES for the* 1951 *competition for the award of medals and diplomas for local authority housing schemes completed at December* 31, 1950, *must be in the hands of the Ministry of Health by January* 31 *next.* p. 654

*NATIONAL HOUSING PROBLEMS were examined by Mrs. Layton in a recent talk on "The Economics of Housing."* p. 667

*THE FULL TEXT of the settlement between the National Federations of Building Employers and Operatives, relating to incentives payments and to sub-contracting for labour only, which was published on December* 15, *is given on* p. 671

*A NUMBER of correspondents have commented upon the article on "Streamlining the Quantities," by Mr. T. Forster, which appeared in a recent issue, and we publish a selection of their views.* p. 675

*THE MINISTRY OF WORKS have stated that cement production in* 1951 *is to be increased by a further* 500,000 *tons and that the substantial rise in the output of bricks in* 1950, *as compared with* 1949, *is expected to continue.* p. 678

*THE LONDON BRICK COMPANY announces that Sir P. Malcolm Stewart has resigned from the chairmanship of the board.* p. 678

## INCENTIVES: SECOND STAGE

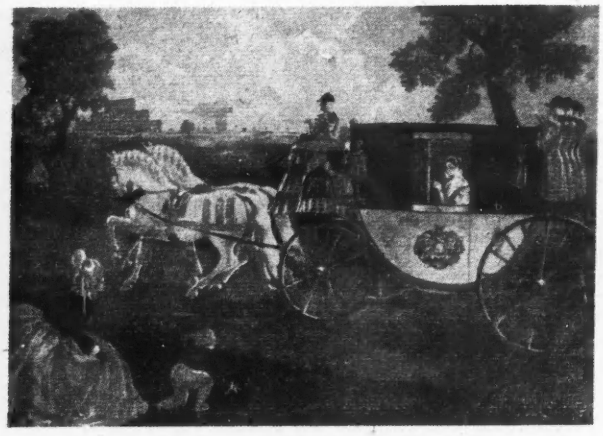
THE Settlement between the National Federations of Employers and Operatives (announced on Friday last and given in full on page 671) is a further step along the road towards higher production to which the industry is committed. The Agreement of 1947, which enabled employers to initiate schemes of bonus-on-output payments, is proposed to be modified to the extent that Regional joint advisory panels are to be set up, from which employers may obtain advice or help on the introduction and operation of incentive schemes, and to which the operatives, acting with and through the district organisers of the trade union, may report] failures by employers to set up schemes or bring other matters in dispute, though this step follows only where employer and district organiser, having previously discussed the matter, fail to arrive at an agreed solution. In the same way an employer whose men will not co-operate in initiating or carrying out a scheme may report the matter to the Regional panel.

These panels may make joint submissions upon problems of general principle to a sub-committee of the two National Executives, which in turn has power, *inter alia*, to call the full Joint Executives together to resolve problems of national policy.

While the Settlement emphasises that the decision to operate a bonus scheme remains the responsibility of the individual employer, and the actual operation remains as between the employer and the men on the site, it is clear that the earlier situation which has so far held, whereby employer and men who could not agree upon a scheme either in principle or in method of working could agree to differ, is now substantially altered, and a third party—in the form of the union organiser or the Regional panel—is introduced. It will not be a matter for surprise if some employers, used to managing their own affairs, find this principle hard to accept, and we have sympathy with them. Yet it is important to keep right in the foreground an appreciation of the fact that the object of the Settlement (which has the approval of both Executives and is due for ratification by the National Joint Council on January 11) is to secure increased output and to lower costs; unless this is secured, and if current trends continue, the industry will shortly price itself out of existence. This Settlement is, in fact, the second step; a third could be less pleasant for all concerned.

For success, much will depend on the composition of the Regional panels and on the good sense and firmness of the district organisers; provided the panels are composed of knowledgeable, fair-minded and practical men—able to give expert advice, resolute in resisting frivolous or improper claims but sympathetic to genuine hardship and difficulties—friction should be reduced to a minimum and efficiency and higher output should result.

A wider question is: Can this or any scheme of incentives succeed under a capital expenditure programme by which building output is restricted by availability of essential materials? A more general application of bonus-on-output payments could of itself produce an increase in efficiency through the shedding of some of the unskilled and irresponsible men who in recent



"Queen Victoria driving to the Great Exhibition of 1851." From a painting by Anna Zinkeisen, R.O.I. (Mr. and Mrs. Howard Lobb's Christmas card.)

years have flocked into the industry. This might be no bad thing, yet the vital factor needed to enable bonus payments to work is a supply of essential materials in sufficient quantity to give that confidence—coming from *seeing* those supplies which mean uninterrupted activity—without which even the most conscientious workman will not give of his best. This is the responsibility of the Government alone, and we must hope that the Ministers of Health and Works will continue to press for greater supplies to be made available—especially of bricks, cement and timber. In this connection a statement (given on another page) to the effect that an extra 500,000 tons of cement will be produced in 1951 and that the brick-making labour force is to be stepped up, is most heartening.

The Settlement (which also contains a section providing for greater control over less reputable labour-only sub-contractors) was bound to come, we believe, in view of the limited application of the 1947 Agreement. It is still voluntary in character and if operated honestly and fairly, resisting any attempt at coercion, whether of employer or operative, the scheme will work, given adequate supply of materials and reasonable time for adjustment.

# NOTES AND NEWS

## The A.B.S. Ball

OVER 600 persons, a full house and overflowing, took possession of the ballroom of the Dorchester on December 13, animated by a single purpose—to enjoy the party and to do the Centenary Fund of the Architects' Benevolent Society a bit of good. So excellent were the arrangements made by a hard-working committee for the entertainment and comfort of the guests that both objects were achieved with something to spare. Too much credit cannot be given to the students of the A.A. and the Regent-street Poly., the latter for the excellently designed booths for side shows and the A.A. for a cabaret entertainment which reached in production and surpassed in wit and humour the average professional standards. All this, added to a warm reception by the President and Mrs. Graham Henderson, was well calculated to make even the most Aberdonian heart throw caution to the winds and as a result the Fund benefited, through a raffle and by some non-stop portrait sketching by Mr. C. H. Drummond, to the extent of £750 (which included £300 given by Mr. and Mrs. Hugh Montgomery). Charles Ernesco's band did much to keep the guests in good form.

No better compliment can be paid to the success of the evening (which produced a birthday cake, two Scottish pipers and something which could easily have been mistaken for an eightsome reel) than to record that Miss Solly, secretary of the A.B.S., has already been asked for tickets for next year's dance. This must certainly become an annual affair.

The Centenary Fund, which will build and endow cottages for old and poor members of the architectural profession (whatever their institution or association) now stands at £4,343. This is a good start but there is a long way to go to reach the desired £50,000 mark. Can time be made to put a cheque in the post before Christmas to help close the gap?

## A.A. Carnival

ON ENTERING through the portals of the Architectural Association on that icy night of December 15 to attend their Carnival, one had only a feeling of sympathy for those brave guests who had arrived wearing thin fancy dress. It was not long, however, before this feeling of sympathy turned to one of envy as the numbers increased and the rooms filled. One then began to feel sorry for the two Wagnerian characters with their heavy robes, chain mail and weighty horned helmets and numerous others dressed for a winter party. The three Satanic figures were presumably in their element.

Number 36 had been extremely well decorated for the occasion, which was only to be expected, and the balloons, streamers and the few grotesque masks which could be seen gave the building a carnival atmosphere. The appearance, later on in the evening, of a Frankenstein Monster must have made a number of the guests think that they had been spending too much time in the Ching's Head.

Those who saw one of the three performances of "The Mendacious Mariner" and "The Rosebud of Stingingnettle Farm," which was a popular item on the programme, appeared to be fortunate as the library door would not open to three great shoulders which were applied to it just after the second performance had started, so tightly was the audience packed inside.

There was a full and varied programme lasting from 9 p.m. to 4.30 a.m. and apart from those items already mentioned, there was country dancing to the Groundsel Nuts Band, the AADEON where one could see Charlie Chaplin and Mack Sennett on the screen, a fancy dress parade with Father Christmas presenting the prizes and carols. Breakfast was provided in the early hours of the morning and some thoughtful guests had brought tents with them.

All present had a very enjoyable and memorable night and hats should be raised to those who were running the bars and buffet and generally administering to the ever-thirsty and hungry guests.

## What is Architecture ?

THAT ELUSIVE THING, a perfect definition of Architecture, seems as far from capture as ever. In his new book, "The Gothic World," reviewed elsewhere in this issue, Mr. John Harvey has the following attempt: "Architecture is, then, building which has been designed and built for a specific purpose; and the architectural content resides in the specific design." This definition would cover a corrugated iron shed, which few are likely to regard as architecture. Later, Mr. Harvey writes that "the only buildings to which the term architecture must be denied are firstly mere copies, and secondly the products of a rigid tradition which permits no departure from precedent." As to the first category, suppose that a copy were made of a building destroyed by fire: is there any valid reason why the copy should not be architecture? If so, then St. Paul's Church, Covent Garden, is outlawed. There seems to be some confusion here of time and materials with æsthetic form. As to the second category, are there any buildings that completely comply with it?

Mr. Harvey quotes and differs from Dr. Pevsner's dictum that "the term architecture applies only to buildings designed with a view to æsthetic appeal," which, though on the right lines, is not completely convincing. Many buildings are designed with a view to æsthetic appeal, but, as we know, they will be judged good or bad according to the viewpoint of the critic. If a building is bad, should it be dignified by the name of architecture? Perhaps after all architecture is beyond exact definition. We all know what we mean by it: the trouble is to get universal agreement.

## M.O.H. Housing Medals

ENTRIES for the 1951 competition for the award of medals and diplomas for local authority housing schemes completed at December 31, 1950, must be in the hands of the Ministry of Health by January 31 next. This year there will be two awards per region, not four.

## Professional Announcement

The new address of Mr. John Howard Leech, F.R.I.B.A., is Ridgeway, Burford, Oxford. Tel.: Burford 3173.

## FROM "THE BUILDER" OF 1850

*Saturday, December 21, 1850.*

EXTENT OF LONDON.—An American, who says our metropolis has filled him with amazement, asks us how many houses it contains, and how many miles of streets. It is stated on good authority that London has 300,000 houses, which cover an area 18 miles long and seven miles wide. Between the 1st of January, 1839, and June, 1850. 64,058 new houses were built, forming 1,652 new streets.

# CORRESPONDENCE

## Contract Organisation and the Q.S.

TO THE EDITOR OF *The Builder.*

SIR,—Your footnote to Mr. M. H. Thackray's remarks at the R.I.B.A. meeting on November 28 last (*The Builder,* December 8, page 594) asked whether Mr. Thackray's views now reflect R.I.C.S. policy. The point under discussion was whether it is proper for a quantity surveyor to take part in resisting pressure to begin building works on the site before full information is available.

Mr. Thackray was, of course, speaking for himself only. But as the point affects building costs and as building costs are of concern to the whole community, I suggest that it is proper for everyone connected with the building industry, quantity surveyors as well as others, to do what they can, whether directly or indirectly, whether by themselves or in concert with others, to promote economy in building and to see that building contracts are organised and managed with that end in view.

R. H. FRANCIS,
Honorary Secretary, Quantity Surveyors' Committee, R.I.C.S.

## Registration of Surveyors

TO THE EDITOR OF *The Builder.*

SIR,—I found the Presidential Address of Mr. Hobbs, published in your issue of November 24, very interesting. I accept Mr. Hobbs' version that the preparing of a registration Bill is a tough job, but to unify the profession is not. W. MACDONALD.

16, Chiswick-lane, W.4.

## Streamlining the Quantities

Correspondence arising out of Mr. T. Forster's article on this subject (*The Builder,* December 8) is given on page 675.

## "Leeds in London" Reunion

ANY EX-STUDENTS of the Leeds School of Architecture now working in the London area who are interested in the revival of the pre-war "Leeds in London" annual dinners are asked to contact Mr. Macfarlane Widdup, Dipl.Arch.(Leeds), A.R.I.B.A., at the Peter Dunham Group, 42-44, Hastings-street, Luton, Bedfordshire.

# SOANE: The Case History of a Personal Style

## MR. JOHN SUMMERSON'S ANALYTICAL STUDY

IN a scholarly paper which he read at the R.I.B.A. on Tuesday evening, December 12, MR. JOHN SUMMERSON, F.S.A., A.R.I.B.A., Curator of Sir John Soane's Museum, traced the origin and later development of Soane's distinctive style. In the course of his paper he said:—

SOANE'S PERSONAL STYLE—the style which first appears in the Bank Stock Office of 1792 and which its author continued to develop and expand for more than 40 years—is one of the curiosities of European architecture. Certainly, in 1792, there was not, anywhere in Europe, an architecture as unconstrained by academic loyalties, as free in the handling of proportion and as adaptable to new ideas in structure and lighting, as that which Soane introduced at the Bank of England. Yet this style is not, as is sometimes supposed, the simple creation of one man. It is the product of many influences at work within the English neo-classical movement and, in particular, the product of two artists—Soane himself, and his master and friend, George Dance.

As a preliminary to the study of this style it is necessary to map out, in a general way, Soane's phenomenally long career—probably the longest active career in the history of English architecture, extending as it does from his decision to be an architect at the age of 15 to his retirement in 1833 at the age of 80. Omitting the years of pupilage, first with George Dance (1768-70) and then with Henry Holland (from 1770 onwards, probably till 1778), Soane's career may conveniently be sub-divided as follows.

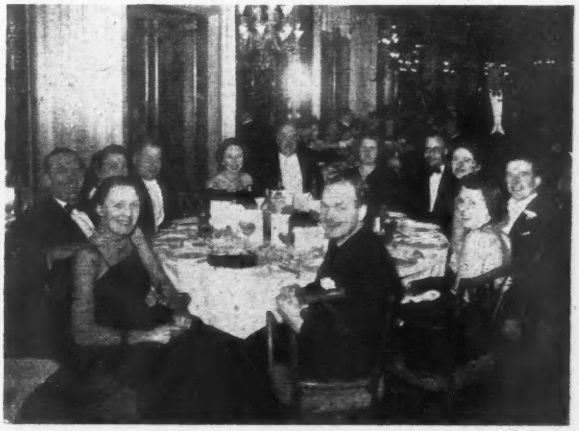
1. *Student Period,* 1776-80 (age 23-27).—Opens with the Triumphal Bridge (R.A. Gold Medal) design, showing the influence of Piranesi and M. J. Peyre. *Designs in Architecture,* published 1778, contains slight and affected studies for garden buildings in different styles, on the model of Chambers' book on Kew. Designs done during his stay in Italy, 1778-80, are influenced by French neo-classicism, and he discovers the Greek Doric order which he understands as a "primitive" type of architecture. The Canine Residence design for the Bishop of Derry, with "ancient" and "modern" versions, foreshadows the duality of style in his later work.

2. *Early Practice Period,* 1780-91 (age 27-38).—Country houses, influenced by Wyatt and Holland, with immature experimentalism, uneasy proportions, marked lack of confidence and no sign, as yet, of the Soane style. The publication of these designs in *Plans of Buildings,* 1788, virtually marks the end of this phase and coincides with Soane's appointment as Surveyor to the Bank of England. His country house work, however, continues, with little advance towards maturity, for another three years.

3. *Middle Period,* 1791-1806 (age 38-53).—A confident and creative period. Recognition comes with official appointments to the Office of Works (1791) and the Office of Woods (1797) and election as A.R.A. (1795) and R.A. (1802). The main elements of the Soane style emerge rapidly in the following works: Wimpole (drawing-room), 1791-93; Bank Stock Office, 1792; No. 12 Lincoln's Inn Fields, 1792; Buckingham House, 1792-94; Tyringham, 1793-98 (gateway 1794); Bank Rotunda, 1796. *Sketches in Architecture,* 1793, includes a cottage design with "proto-Doric" columns, forecasting the "primativism" which is formalised at Bentley Priory (1798) and Pitzhanger (rear elevation and gateway, 1800-02). Throughout most of this period there is evidence of close collaboration with George Dance.

4. *Picturesque Period,* 1806-21 (age 53-68).—The period opens with the intellectual effort involved in the preparation of R.A. Lectures from 1806. Almost complete absence of new invention, but the constants of the Soane style are re-combined and expanded to obtain new and picturesque effects, which Soane called the "poetry of Architecture." Gothic and Pompeian elements are absorbed into the style, and the aesthetic theories of Payne Knight and Uvedale Price were probably influential. Picturesque top-lighting, originated for prac-

Mr. Eric Bird, M.C., A.R.I.B.A. (nearest camera), and his party. On his left is Miss Solly (Secretary A.B.S.)



The Incorporated Association of Architects and Surveyors' table at the Centenary Ball

THE ARCHITECTS' BENEVOLENT SOCIETY'S CENTENARY BALL

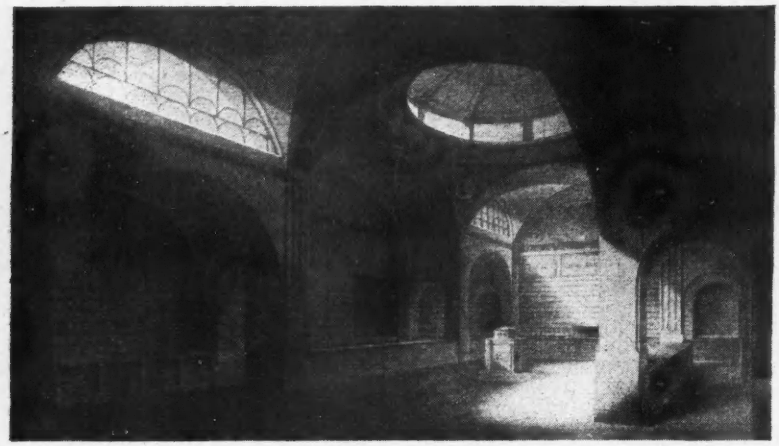


Fig. 1.—The Bank Stock Office (John Soane, 1792)

tical reasons at the Bank, becomes an essential of the Soane style. The Dulwich Art Gallery, No. 13 Lincoln's Inn Fields and the later Bank Halls are the chief works of the period.

5. *Last Period,* 1821-33 (age 68-80).—Mostly public works. The Law Courts (begun 1820) and Privy Council Offices (1824-27) show the ultimate development and expansion of the themes evolved in the Middle Period. In the Royal Palace Designs, the Scala Regia and Royal Gallery of the House of Lords, however, Soane returns to an academic expression, which although mixed with "Soanic" details is no advance on his very earliest academic studies, such as the Bridge, Senate House and Palace of the student period.

Obviously, it is the Middle Period, 1791-1806, which is the crucial one for the analysis of the Soane style. Indeed, if we can determine how the Bank Stock Office of 1792 came to assume the form it did, if we can satisfactorily explain that first astonishing manifestation of the style (Fig. 1) our problem is as good as solved.

Let us, first, examine the conditions. There are three points to be observed. First, the Bank Stock Office was to be built on the site of the old Office, a site which was confined in such a way that no allowance could be made for any projections to provide additional abutment. Second, that whereas the old Office had been timber-roofed, the new building was to be as nearly fire-proof as possible and, therefore, vaulted. Third, the new building was to be top-lit. Among Soane's sketches, preserved in his museum, are some indicating how he first proposed to meet these conditions. His first study is inspired by the classical type represented by the Basilica of Constantine and the Baths of Diocletian. This type meets the conditions satisfactorily, since the abutment of the main vault is taken into the building, and clerestorey lighting is inherent in the cross-section. Such a solution we should expect from any neo-classically minded architect of the period. Soane's modifications of his chosen model, however, are interesting. Instead of heavily mullioned windows on the Roman model, he gives us complete glazed semi-circles—a modification which at once recalls a London building he knew well—George Dance's Allhallows, London Wall. This and two other buildings by Dance are so important to our purpose that we must digress to consider them.

Allhallows was Dance's first work, begun in 1765, the year after his return from Rome. It may justly be called the first strictly neo-classical building in Britain (Fig. 2), neo-classical in its derivation from a Roman Bath prototype and neo-classical more particularly in the treatment of the order which, above cap level, consists of nothing but an enriched architrave. The omission, here, of frieze and cornice was a very daring innovation in 1765, and when Soane, as a young student, first saw the church he thought its architect guilty of an unaccountable misdemeanour. The point of the omissions (as Soane, who was in Dance's office, soon learnt) is explained by neo-classicist theory, notably that of the Abbé Laugier, who insists on the "functional" character of architrave and cornice and recommends the omission of cornices (being, in effect, leaves) in certain circumstances. Dance, in fact, was here exploiting the Franco-Italian neo-classicism which he picked up in Rome and Parma. An impor-

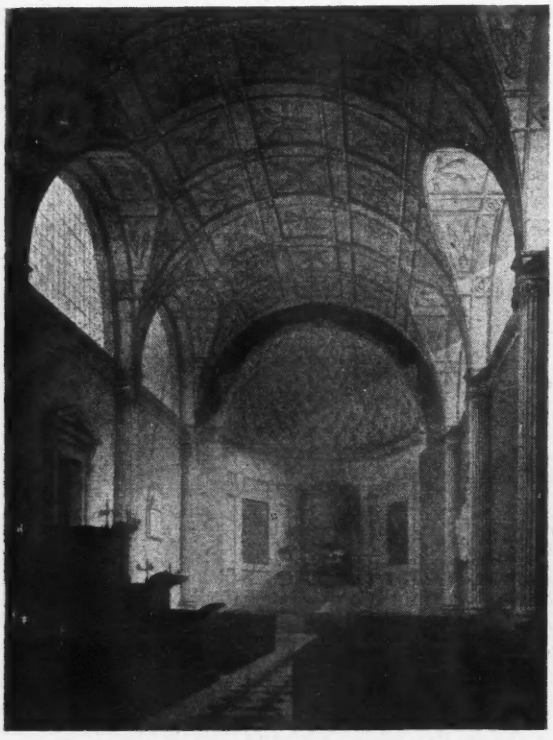


Fig. 2.—Allhallows, London Wall (Geo. Dance, 1765)

Fig. 3.—Guildhall Council Chambers (Geo. Dance, 1777)

tant characteristic of that style is a tendency to omission. Here, indeed, is the beginning, in England, of that process of omission which Soane, Dance's pupil and friend, was to carry to such extremes.

Before returning to the Bank Stock Office, we must look at two other buildings by Dance which will be found to have a bearing on it. The first is the Guildhall Council Chamber (Fig. 3), built in 1777, a revolutionary building hitherto almost entirely overlooked by architectural historians, and one which forestalls a great deal of what we are apt to think of as original in Soane. This Council Chamber (destroyed in 1906) was a square hall covered by a dome on pendentives with a central *oculus* (glazed), an arrangement rendered especially remarkable by the way in which the pendentives met the dome in flattened curves so that these, with the crowns of the arches, gave the base of the dome a "scalloped" line, like the outer edge of an umbrella. The sources of this design are not at all obvious, and I have found nothing remotely suggesting it either in French neo-classicism or in late Italian Baroque. What is obvious, however, is that the design of the dome foreshadows the Soane style very clearly indeed.

The third Dance building is much closer to the Bank Stock Office in date—in fact contemporary with it—and so close to it in style that we are bound to assume a complete identity of view between the two artists at this date. It must have been about 1792 that Dance was called in by the Marquis of Lansdowne to succeed Robert Adam (who died in that year) at Lansdowne House, to complete the great Library for which Adam had made provision in his plan. Dance's designs for this building (ultimately finished by Sir Robert Smirke, much later) are in the Soane Museum. They show a hall covered by a curved (segmental) ceiling, opening at each end into a domed space of the Minerva Medica type. Each of these domed spaces is sliced off, vertically, where it meets the hall; and since the domes rise higher than the ceiling between them there is accommodation in each for a great semi-circular window above ceiling level. These windows light the domed spaces without being visible from the hall (Fig. 4).

Now the design of the junction between hall and domed space here is exactly comparable to the second of Soane's early sketches for the Bank Stock Office, the one in which there are semi-circular windows over segmental arches. What is the inspiration behind these designs? In Dance's case, the Minerva Medica is one obvious source, but in addition there is, I think, an indebtedness to a set of engravings of about 1777, of the decorations in the ruins of a Roman house in the grounds of the Villa Negroni. These decorations comprise theatric architecture of the kind familiar at Pompeii, including thin segmental arches suggestive of those in the Lansdowne House design. Both Dance and Soane possessed these engravings, and Soane certainly borrowed from one of them when decorating his Ealing house in 1801. They have, I suggest, an important bearing on the emergence of the Dance-Soane style in the 1790's.

The next step in the evolution of the Bank Stock Office was the recasting of the centre bay as a domed space, and the continuation of this space in two directions to form, in effect, a "transept." It is just possible that the first sketches for this are in Dance's hand and the domed space, with its *oculus*, has an obvious affinity with his Guildhall Council Chamber. There was, however, another precedent, very near at hand, which from this moment will have affected the issue profoundly. This was the Reduced Annuities Office in the Bank itself, the last building contributed to it by Sir Robert Taylor, before his death in 1788 (Fig. 5).

The Reduced Annuities Office (demolished 1850) was a square hall with segmental wall-arches springing from piers composed of Doric columns. One would expect this arrangement to carry a saucer dome, but instead of a dome there was a ceiling (apparently flat), raised over a circular clerestory of windows. For a rather solid septuagenarian like Taylor, this was a startling innovation, for there was certainly no building in the London of 1788 lit in this way. We need not believe, of course, that it was necessarily Taylor's personal work. The real author may be guessed at, but that question need not trouble us here. We must assume that this mode of top-side lighting was arrived at empirically, as the solution of a peculiarly difficult problem which the lay-lights in Taylor's earlier buildings had failed to solve. In any case, Soane chose or was induced to adopt it, and it was to become an important element in the Soane style.

So the centre bay of the Bank Stock Office became, first, a domed space with an *oculus* and then a space with pendentives carrying a circular ring of windows and a flattish, conical ceiling. From this point, the elements of the executed design are all present.

The final version of the Bank Stock Office, however, is quite a lot different even from the latest preliminary sketches. The centre bay has been greatly enlarged and the aisles (what is left of them) pushed into the corners. The end bays have become oblong instead of square and are merely subsidiary extensions of the central space. Nearly all trace of the Baths of Diocletian has vanished, and we are presented with a building unclassifiable in terms of any known style. What has happened? Clearly,

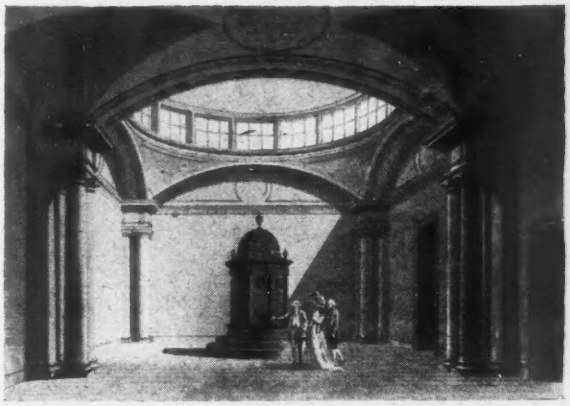


Fig. 5.—Reduced Annuities Office, Bank of England (Taylor,? 1788)

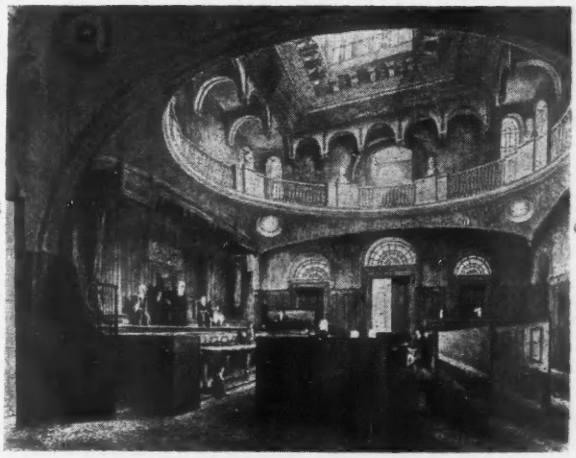


Fig. 6.—Court of Chancery, Westminster (Soane)

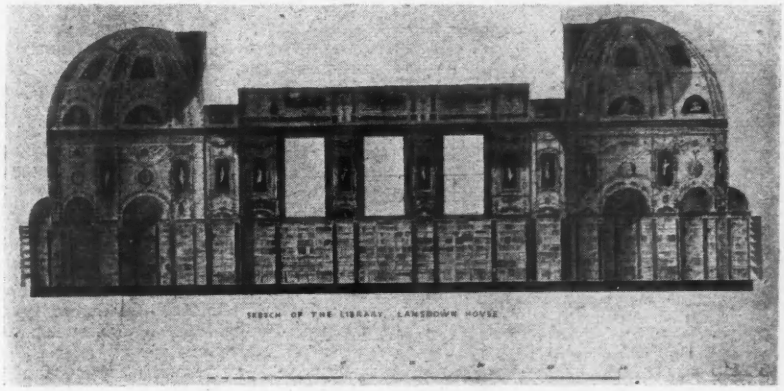


Fig. 4.—The Library, Lansdowne House (Geo. Dance, ? 1792)

at some point, Soane decided that a building of this character, subjected to all sorts of practical exigencies, could be liberated completely from classical standards of proportion. The collaboration with Dance, which undoubtedly took place in the earlier stages, carried him some way towards this point, but I suspect that the last step was taken by Soane himself. I suspect this because I believe that the matter of proportion is, in the last resort, a matter of personality, and in Soane the capacity to recognise intuitively an equilibrium of ratios was very weak, or, perhaps one should say, distorted. Proportion did not bother him. He accepted Laugier's statement that it must necessarily be a question for the individual judgment, and had no patience with attempts to crystallise it theoretically. The result was that the proportions of his own buildings are free, personal and, since his mind was not one of those which constantly seek the harmony of classicism, unclassical. This is shown, over and over again, in the early houses. Wherever proportion is not dictated by the modules and intercolumniations of an order, Soane's proportions stray. They stray, it must be confessed, sometimes into that meanness and "creepiness" which characterise the least lovely of his works.

Few critics would consider the proportions of the Bank Stock Office as "happy." They are unclassical — even chaotic. But that is the condition of the building's freedom; and in this uneasy freedom Soane discovered his style. Look now at the ornaments. There is, of course, no classical order; no order could possibly master a composition of such froward and unruly proportions. There is no classical order, but there is a substitute, a token order consisting of vertical strips in relief, in the places where columns or pilasters might be expected to occur. These pilaster-strips play a very important part in the Soane style, and I shall show later that they are symptoms of a "primitivism" to which Soane subscribed and which will have been connected, in his mind, with the neo-classical thesis that the bed-rock of architecture is, not the canon of the orders, but the primitive hut in which the orders and their parts have their prototypes.

Apart from the pilaster-strips, and the fretted string-course which is a "token" entablature, the ornament in the Bank Stock Office consists only of delicate plaster panels introduced on the walls and the soffites of the arches, scorings on the spandrils, and *paterae* in appropriate positions. These are simply the devices of a classically trained architect to give the whole composition a textural conformity and a sense of punctuation.

When all the elements of the Bank Stock Office have been accounted for and when, in addition, allowance has been made for the fact that the vault is constructed of hollow fire-clay pots necessitating the greatest possible reduction of mass, an inexplicable something—the building's *temperament* — yet remains. That, in any work of art, is the central mystery; it is the mystery of personality, which is also the mystery of style.

The Bank Stock Office is the first building in which the Soane style is completely manifest. The result, obviously, was arrived at with great difficulty; with much help from Dance in the early stages and painful effort by Soane later on. In a sense it is the key building of his entire career. Almost all the later examples of the Soane style are related to it in one way or another.

Soane's domes do not always follow the Stock Office pattern. He remained equally attached to the type of dome which Dance had introduced at the Guildhall and which he himself had begun to use as early as 1789. It is, structurally, no different from the Stock Office dome, though the humped articulation of the spandrils gives it a different look. He used it in the house he built for William Praed at Tyringham in 1798. Here, we find it in the so-called "tribune," a vestibule opening into the first floor and lit from a roof lantern. The general idea comes, I imagine, from Henry Holland's octagon vestibule at Carlton House, but at Tyringham the first-floor opening is an *oculus* in a domed ceiling on the Dance pattern, while the oval lantern takes after the Bank. This is one of the creations of Soane's middle period which he continued to expand and elaborate and which finally, in the most intrepid expansion of all, becomes the Court of Chancery at Westminster (Fig. 6). In this, one of Soane's very last works, the expansion of an old theme is stretched just as far as it will go. The arches of the dome are drawn out to an exceedingly flat five-centred curve, while the *oculus* is so large as to dispose of all the dome except the confluent spandrils which become little more than the shaped soffit of a circular cantilevered gallery. The arches hanging from the ceiling are related to the hanging arches in the Museum dining-room and thus again (though here remotely) to the Bank Stock Office. The interior as a whole is the most dramatic and surprising of Soane's conversions of the themes of the seventeen-nineties. It underlines again his inability to invent new themes after a certain date and his absolute reliance on those which had become an integral part of his stock of ideas in the period when Dance was so often at his elbow.

The Soane style was evolved rapidly and completely within a few years, when Soane was aged, say, 38-45 and when he had the advantage of frequent discussion with and help from George Dance. Everything before that period was either academically derivative or feeble and affected; everything afterwards depended on the half-dozen or so themes of the creative period. These were combined, expanded, converted, inverted and modified in all sorts of ways, but not a single new theme was added to their number. Soane became the prisoner of his own style.

Of the extent of Soane's debt to George Dance there is not the slightest question, and in the case of a Soane building of the 1790's, which I have not mentioned, the Rotunda at the Bank of England (1796), we have documentary proof of it; for Soane preserved some little scribbles of a domed interior clearly related to the Rotunda, on one of which he wrote "Sketch by Mr. G. Dance."

What is beyond doubt, however, is that the style which we all know as the Soane style is the work not of one man but of two. Sir John Soane would not have denied this for a moment, for in his lifetime he never ceased to acknowledge his indebtedness to his "revered master." There stands today, in the Soane Museum, the great chest which Sir John designed to enclose his collection of George Dance's drawings. It is sometimes observed that it looks like a sarcophagus. It is also very like a shrine.

# COMPETITION NEWS

## Two Festival Competitions

THE Festival of Britain (Northern Ireland Committee) announce two competitions: (a) for the design of a recreation centre, and (b) for the design of a seaside hotel. Both are organised by the Royal Society of Ulster Architects in association with C.E.M.A. (Northern Ireland). The designs will be shown in a public exhibition of architecture to be held in Belfast as part of the Festival.

*Recreation Centre.* — This competition, open to architects and student architects, is for designs only, though it is to be planned for a known site in Dublin-road, Enniskillen. Not more than £15,000 is to be spent on the construction, exclusive of furniture and site layout. Drawings required are (1) layout plan, indicating two tennis courts and one bowling green; (2) plans of all floors, at least two elevations and at least two sections. A main hall with fixed stage, male and female dressing rooms, supper room and kitchenette, various recreation rooms and changing rooms—totalling 5,450 sq. ft. exclusive of entrance lobby, stage and proscenium.

Mr. Desmond FitzGerald, B.Arch., A.R.I.B.A., F.R.I.A.I., is assessor, and premiums of £100, £50 and £25 are offered. Conditions and site plans are obtainable from the hon. secretary, Royal Society of Ulster Architects, 7, College-square North, Belfast, to whom questions were to be addressed by December 1* and to whom designs must be sent by March 31 next.

*Seaside Hotel.* — Open also to architects and student architects, this competition is again for designs only, though to be planned on a given site at Glencraig, Craigavad, Co. Down. The estimated cost must be within £125,000 exclusive of kitchen equipment, furniture and site layout. On the principle that only part of the accommodation would be open throughout the year, the schedule of accommodation is divided into two parts. Mr. Desmond FitzGerald, B.Arch., is assessor, and premiums of £200, £100 and £50 are offered. Conditions and site plan are available from the hon. secretary of the Ulster Society, as above, to whom questions may be addressed before December 1,* and to whom designs must be sent by March 31 next.

# OBITUARY

**William Arthur Kellett, L.R.I.B.A.**

We regret to announce the death on December 7 of Mr. William Arthur Kellett, L.R.I.B.A., who designed a number of prominent buildings throughout Yorkshire and County Durham.

Before going to York in 1930, Mr. Kellett practised at Bishop Auckland (his home town) and later at Barnard Castle. He designed the Garrison Memorial Church at Catterick Camp and was responsible for the reconstruction of Conishead Priory at Ulverston, Lancashire, as a convalescent home for Durham miners. He also designed many pit-head baths in County Durham as well as Methodist Churches at Darlington, Richmond and York. Mr. Kellett was 62.

**J. Herbert Willis**

The death is announced of Mr. James Herbert Willis, architect, who was for many years with the Office of Works, attached to the British Embassy, Constantinople.

* The conditions were received in this office on December 15.—EDITOR.

# FACTORY BUILDINGS AT MARSH MILLS, PLYMOUTH

*For Messrs. Tecalemit, Ltd.*

**GALLANNAUGH AND WALLS, ARCHITECTS**

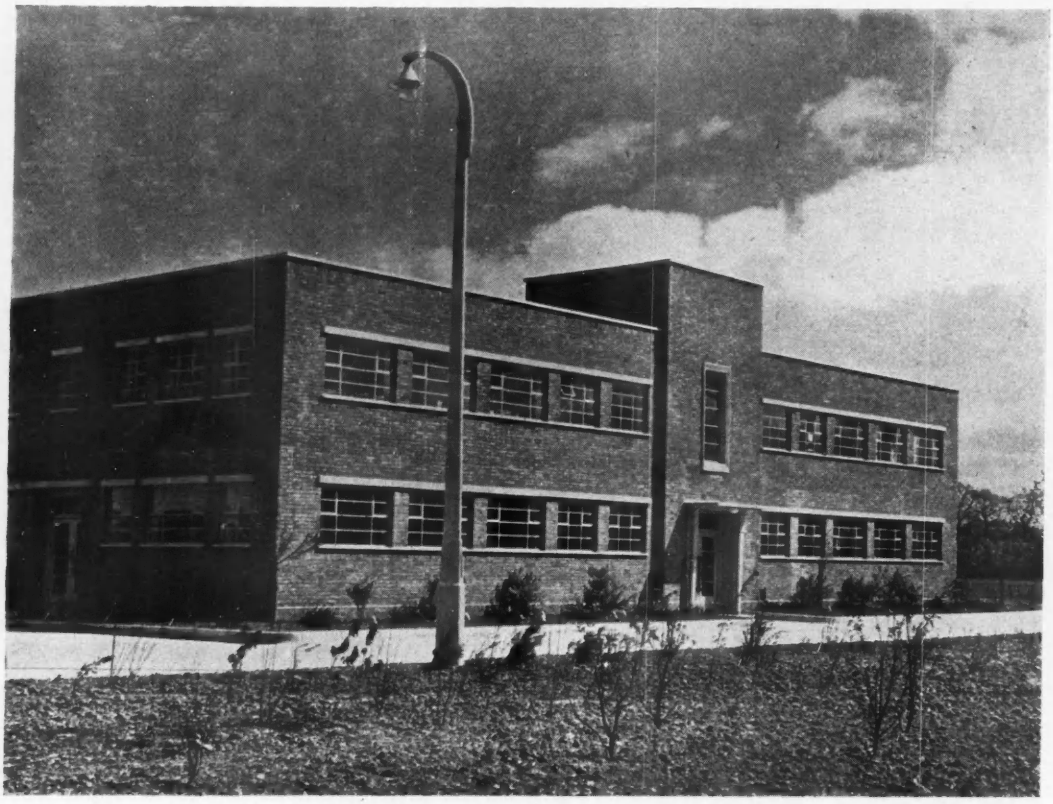
THIS project has been proceeding for some time and the potential scheme is indicated on the block plan on page 662. This block plan shows how the scheme is developing, and the units already completed are coloured black. The roundabout which is shown at the entrance to the factory is part of the Plymouth scheme and the dual carriageway leading off the roundabout in a north-westerly direction will be the main road by-passing Plymouth to Cornwall.

The site itself has presented some difficulties due to the low-lying nature of the ground, necessitating the raising of the whole area to ensure that it is above flood level. The northern side of the site rises fairly rapidly, so that the buildings in this area are of a terraced nature. The site area necessary to accommodate these proposals amounts to approximately 70 acres.

Unit No. 10 on the block plan forms the main production area and is composed of ten bays approximately 50 ft. by 500 ft. These bays are double storey at each end, for the purpose of records and the computation of works data. There is also a second storey in the middle of each bay, which is continuous as a spine to this area. The latter, connecting to the boiler house, No. 8, transformer house and compressor chambers, No. 9, allows for a continuous plant corridor accommodating all the services and plant which are required for each of the ten bays. By this principle, maintenance of plant is made extremely convenient and, furthermore, unauthorised persons from the factory cannot obtain access and interfere with the various services. Likewise, the extracts, etc., are taken from each bay into the same plant corridor, which enables a neat and tidy layout, with proper control. To give an indication of the size of this industrial unit, section No. 10 has a total floor area of 283,000 sq. ft., and it is anticipated that to complete the unit as indicated on the block plan, the total floor area will be approximately 715,870 sq. ft.

This project is being executed by direct labour. The general treatment of all the buildings is in harmony; brickwork has been executed in golden brown hand-made facing bricks, with Ham Hill reconstructed stone cills, heads, door surrounds, copings, etc.

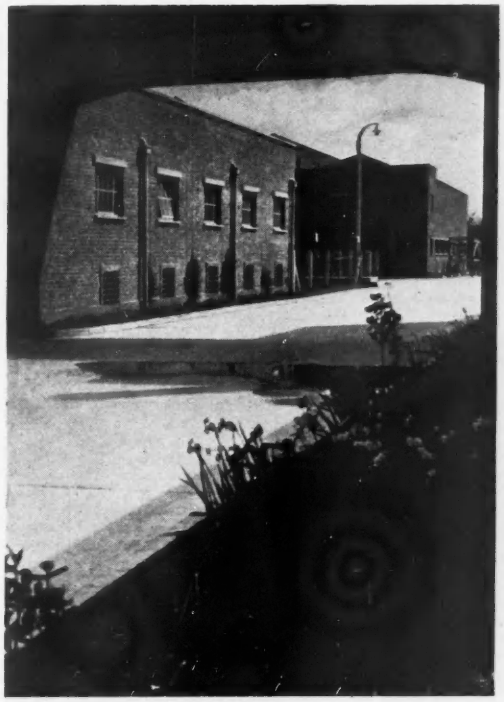
The sub-contractors include: Steelwork for production bays, supplied by Appleby Frodingham Steel Co., and erected by Orthostyle, Ltd.; steelwork for remaining buildings, supplied and erected by Blight and White, Ltd.; patent glazing, Williams and Williams, Ltd.; steel windows, Crittall Manufacturing Co., Ltd.; reinforcing fabric for suspended floors, roofs and foundations, The B.R.C. Engineering Co., Ltd.; reconstructed Ham Hill stonework and precast concrete, The Wharf Lane Concrete Co., Ltd.; heating, The Freeman Heating Co., Ltd.; lantern lights, Williams and Williams, Ltd.; asbestos roof (Trafford tiles), Turner and Sons, Ltd.; sanitary fittings, Gardiner, Sons, and Co., Ltd.; ironmongery, Gardiner, Sons, and Co., Ltd.; R. P. M. roofing, The Wolverhampton Corrugated Iron Co., Ltd.; roof lining, The Specialised Construction, Ltd.; rolling shutters, Mather and Platt, Ltd.; glazed tiling and lavatory partitions, Shaws Glazed Brick Co., Ltd.; pressed steel gutters, handrails and balustrading, Woodrow Metals, Ltd.; warehouse door, Esavian Ltd.; asphalt, The Limmer and Trinidad Lake Asphalt Co., Ltd.; wood block floors, Horsley Smith and Co., Ltd. and The National Flooring Co., Ltd.; Semastic tiles, The Limmer and Trinidad Lake Asphalt Co., Ltd.; electrical work, Tecalemit, Ltd.; joinery, J. Wipple and Co., Ltd., and Tecalemit, Ltd.; and plumbing, Tecalemit, Ltd.



The engineering development building

One of the production bays showing double north light

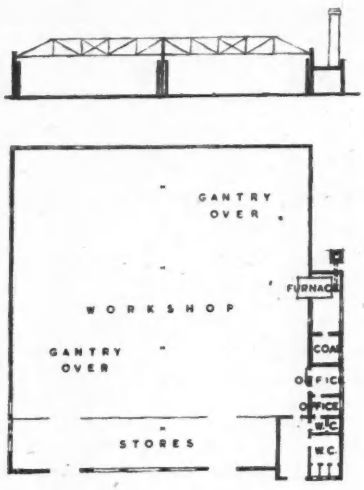
View of part of end of one of the production bays



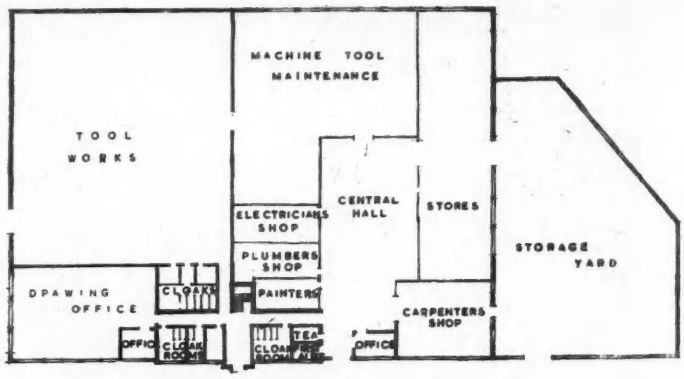
The compressor house with plant corridor connecting to production bays

Detail of entrance to engineering development building

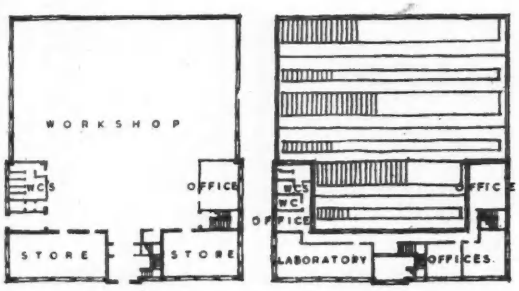
View of production bays and compressor house



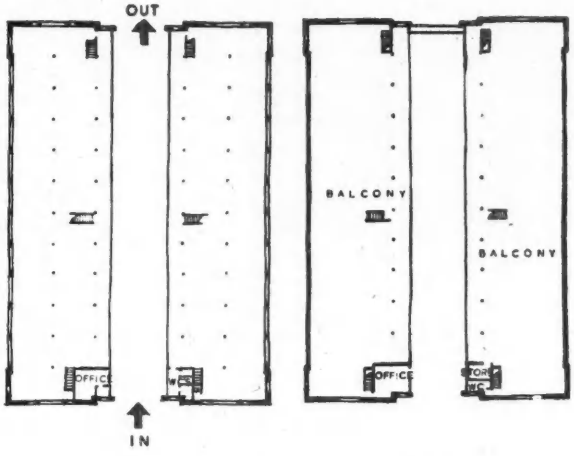

HEAVY FABRICATION SHOP. Plan and section.



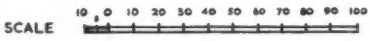

TOOL WORKS AND MAINTENANCE BUILDING. Ground-floor plan

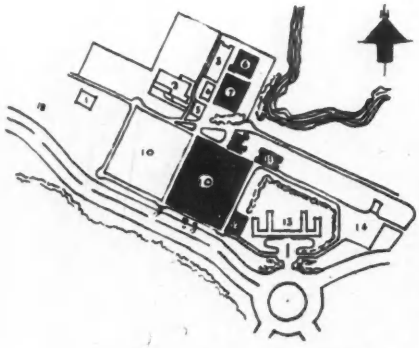



ENGINEERING DEVELOPMENT BUILDING. Ground- and first-floor plans



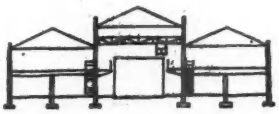

THE WAREHOUSE. Ground- and first-floor plans

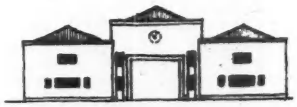


1 SOCIAL CENTRE
2 CANTEEN
3 FOUNDRY
4 NON-FERROUS FOUNDRY
5 PLASTIC MOULDING
6 HEAVY FABRICATION SHOP
7 TOOLWORKS & MAINTENANCE BLDG
8 BOILER HOUSE
9 TRANSFORMER & COMPRESSOR HOUSE
10 PRODUCTION BAYS
11 WAREHOUSE
12 ENGINEERING DEVELOPMENT BLDG
13 ADMINISTRATION OFFICES
14 CAR PARK
15 NEUTRALISING PLANT
16 METER HOUSE
17 PUMP HOUSE
18 PLAYING FIELDS

THE SITE PLAN. Buildings blacked in have been completed

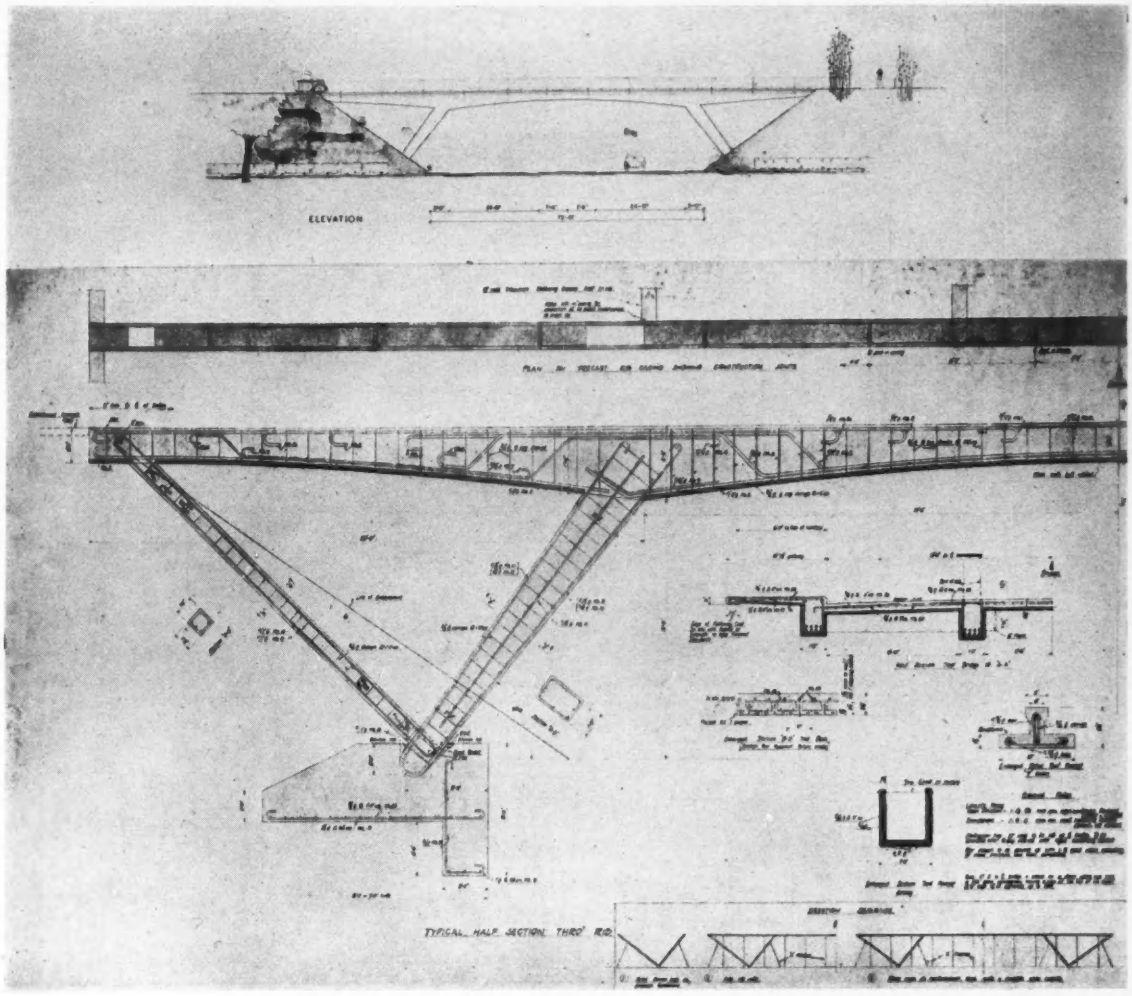




THE WAREHOUSE. Section and west elevation.

## FACTORY BUILDINGS AT MARSH MILLS, PLYMOUTH

GALLANNAUGH AND WALLS, ARCHITECTS




**Roadbridge with 73 ft. clear span.** *Top:* **Elevation.** *Below:* **Details**

**DESIGNS PLACED FIRST (EQUAL). ATKINS AND PARTNERS AND CLIVE PASCALL, A.R.I.B.A.**

# COMPETITION FOR MOTORWAYS BRIDGES

## Assessors' and Winners' Reports

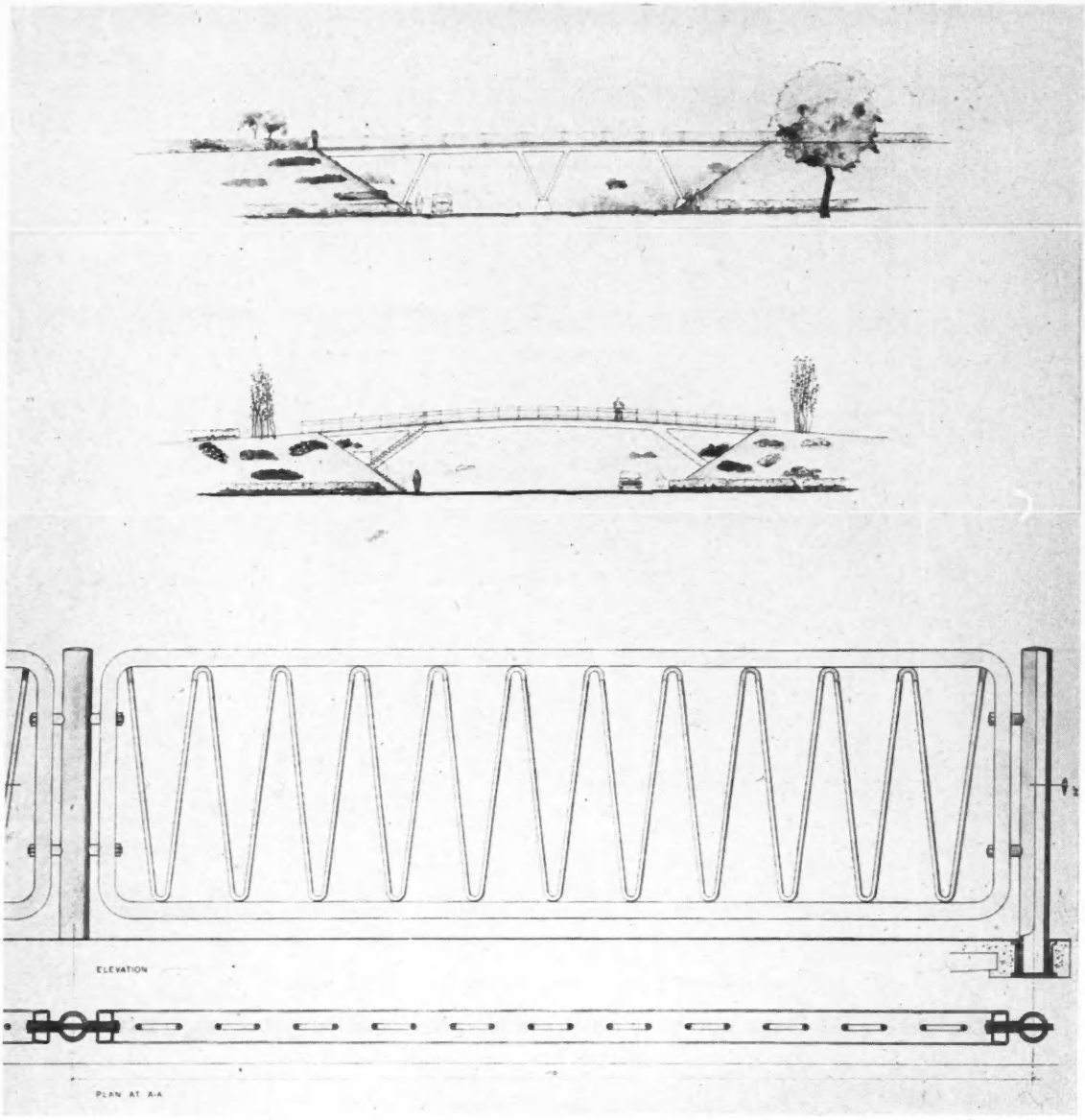
AS announced in our issue of December 1, the assessors in the competition organised by the Cement and Concrete Association for bridge designs which will combine economy with speed of construction and good appearance, have made their award.

Competitors were required to submit one design for each of three types of bridge, all to be suitable for carrying a road or footpath over a motorway, the bridge to be built of plain, reinforced or prestressed concrete, or a combination of any of these materials. The assessors were: Sir Percy Thomas, O.B.E., P-P.R.I.B.A., and Messrs. J. Cuerel, B.Sc., M.Inst.C.E.; A. Moller, M.I.Struct.E.; E. John Powell, M.Inst.C.E.; and J. Reed, B.Sc., M.Inst.C.E. Their report is as follows:—

Twenty-five designs were received in response to the invitation of the Cement and Concrete Association, which have all been carefully examined. Generally speaking, the standard of design, both from an engineering and æsthetic point of view, was rather below what might have been expected from the profession. The majority of the designs showed little attempt to depart from the stereotyped solution of the problem, and very few showed any real architectural qualities combined with sound engineering knowledge.

In the opinion of the assessors, Design No. 14, by MESSRS. ATKINS AND PARTNERS and MR. CLIVE PASCALL, A.R.I.B.A., and Design No. 22, by MESSRS. LINDSEY DRAKE, A.R.I.B.A., DENYS LASDUN, F.R.I.B.A., A. J. HARRIS, B.Sc., A.M.I.C.E., and W. M. JOHNS, M.C., B.Sc., A.M.I.C.E., are the best submitted, and they are so equal in merit that the assessors have decided to place them together and divide the first and second prizes between them. Each [of these two groups of] competitor[s] will, therefore, receive an award of £400. The third prize of £200 has been awarded to Design No. 13 —MR. LOUIS ERDI, L.R.I.B.A., and Mr. A. J. B. BIRKMYER, A.M.I.Struct.E.

The assessors are conscious of faults in all the designs, but feel that in the circumstances consideration should be given to such submissions as seem to them to be capable of ready correction of details within the framework of the designs put forward. They offer the following general criticisms of the efforts of candidates in respect of which awards have been made: (1) Over-emphasis on precasting, coupled with lack of development of the jointing; (2) The fact that the bridges would be constructed before the opening of the motor road does not appear to have been given sufficient consideration.




*Top:* **Roadbridge with two or more spans.** *Centre:* **Footbridge.** *Below:* **Detail of Balustrading**

**DESIGNS PLACED FIRST (EQUAL). ATKINS AND PARTNERS AND CLIVE PASCALL, A.R.I.B.A.**

## Winners' Reports

Following is a summary of the report submitted by Messrs. Atkins and Partners, and Clive Pascall:—

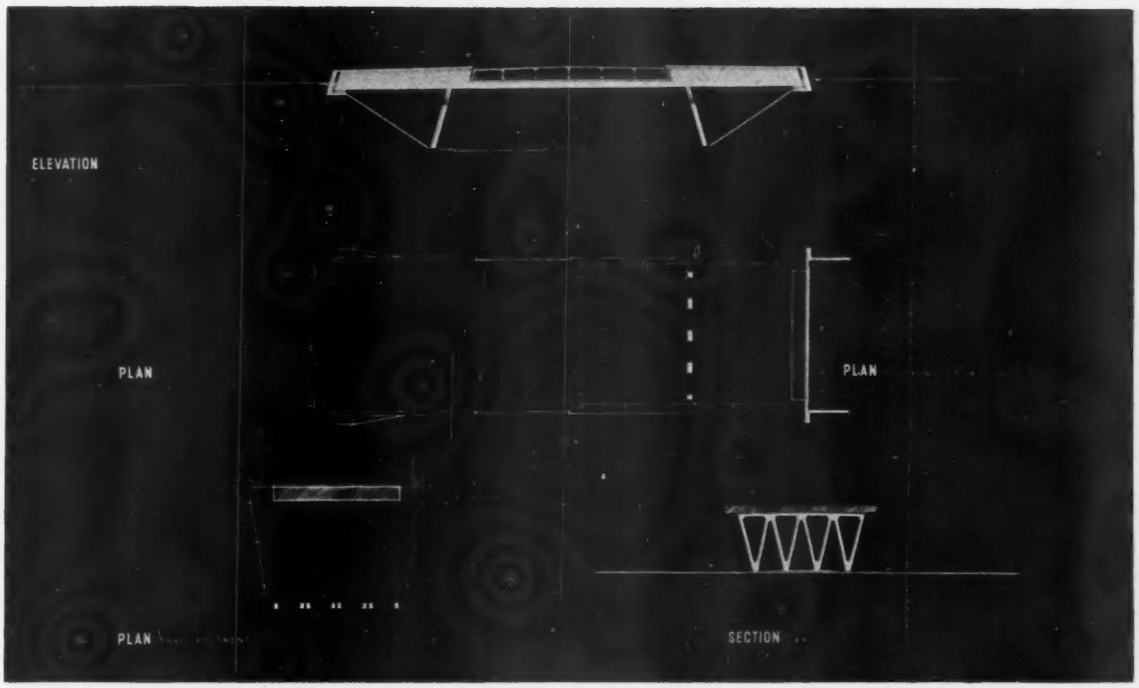
*Design for roadbridge with 73 ft. clear span.*—The main portal type framework is of monolithic reinforced concrete cast in "U"-shaped precast concrete shuttering propped from below and carrying the precast formwork for the slab between the ribs. No special surface treatment is envisaged. The casing to the main ribs, the legs and underside of the deck being all precast, a fine natural finish will be obtained without further cost.

*Design for roadbridge with two or more spans.*—This bridge consists of a number of precast beams placed on supports which are hinged at the top and base, the beams being connected up by a short length of *in situ* concrete. The design has been evolved from that for the single-span bridge. A feature has been made of the central support in the form of an inverted "A" frame. This takes advantage of the full width of the central reservation without impairing visibility.

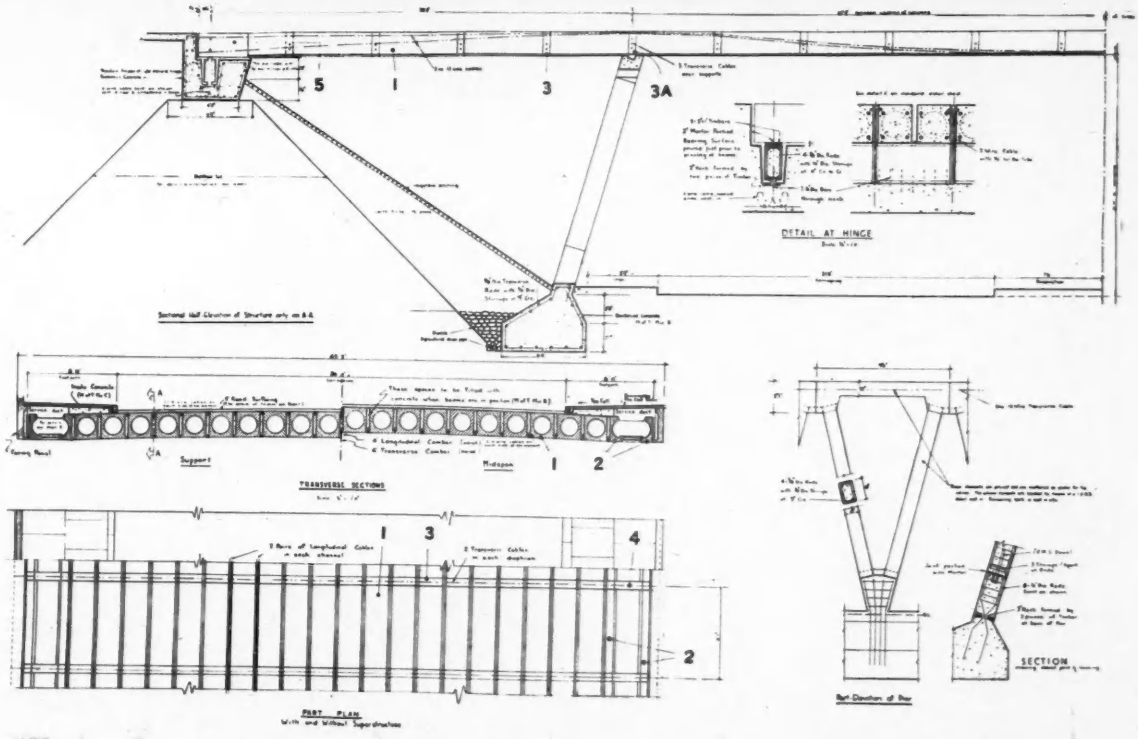
*Design for footbridge.*—A jointed portal frame forms the basis of this design. A light deck spans between two such frames, which are braced laterally at intervals by cross beams. The raking outer supports are used in a secondary role as stringers to support a staircase, should this be required, by leaving slots in the legs into which precast concrete treads can be fixed. The main structure is composed of precast concrete units, the deck itself being cast *in situ*.

Following is a summary of the report of Messrs. Lindsey Drake, Denys Lasdun, A. J. Harris and W. M. Johns:—

*Design for roadbridge with 73 ft. clear span.*—This bridge has been designed as a three-span continuous prestressed concrete slab bridge, the intention being to employ as far as possible the same form of precas



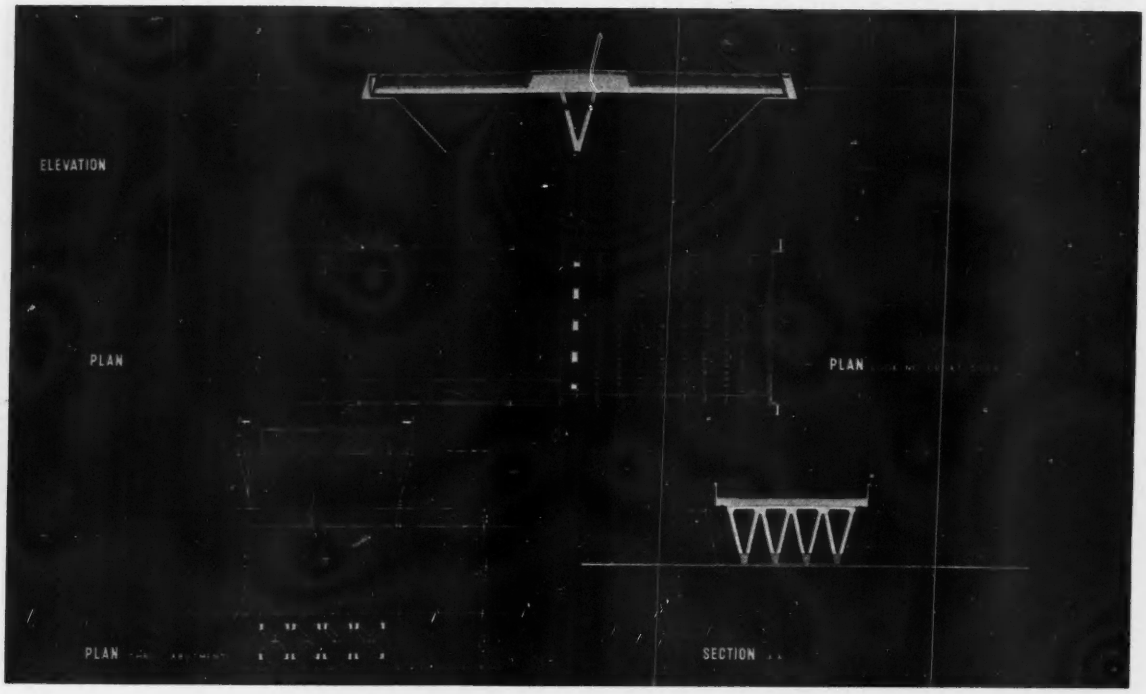

**Roadbridge with 73 ft. clear span.** *Below:* **Details**



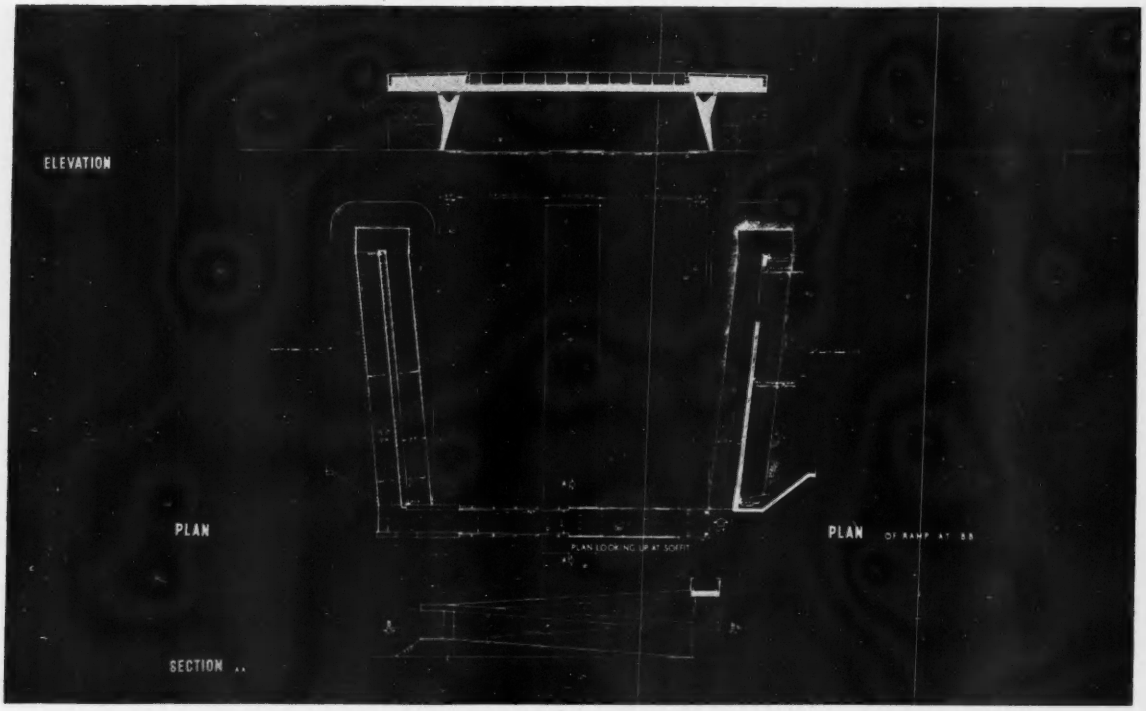

**DESIGNS PLACED FIRST (EQUAL). LINDSEY DRAKE, A.R.I.B.A., DENYS LASDUN, F.R.I.B.A., A. J. HARRIS AND W. M. JOHNS**

concrete unit for all three bridges. The beams forming the slab are made up of pre-cast sections assembled and tensioned on trestles at the level of the bridge profile so that the beams can be easily moved into position. The deck concrete is then poured between and over these beams which are then stressed transversely.

*Design for roadbridge with two or more spans.*—The general considerations applying to the form of this bridge are similar to those applying to the 73 ft. clear span



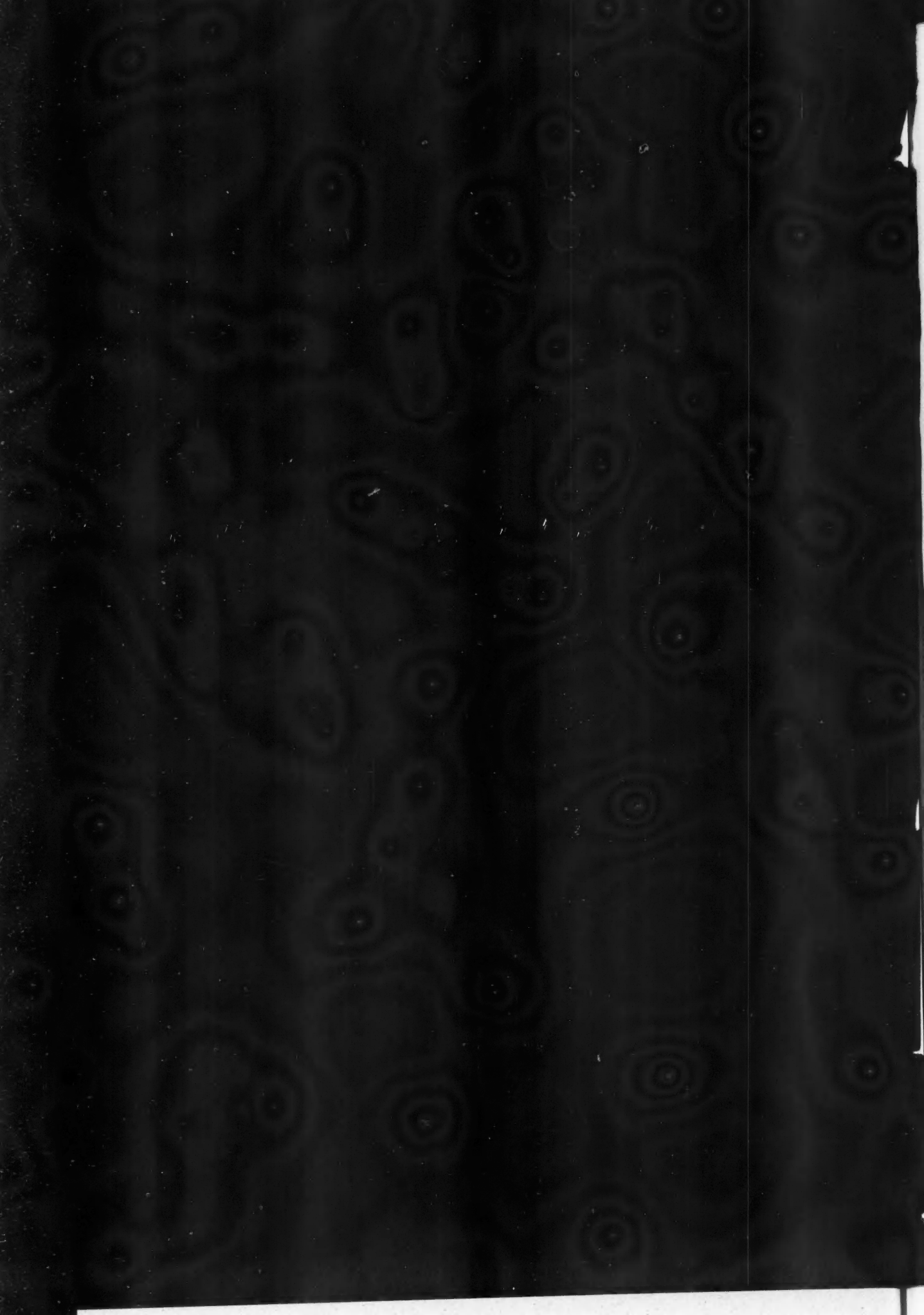

**Design for two-span bridge.** *Below:* **Design for footbridge**

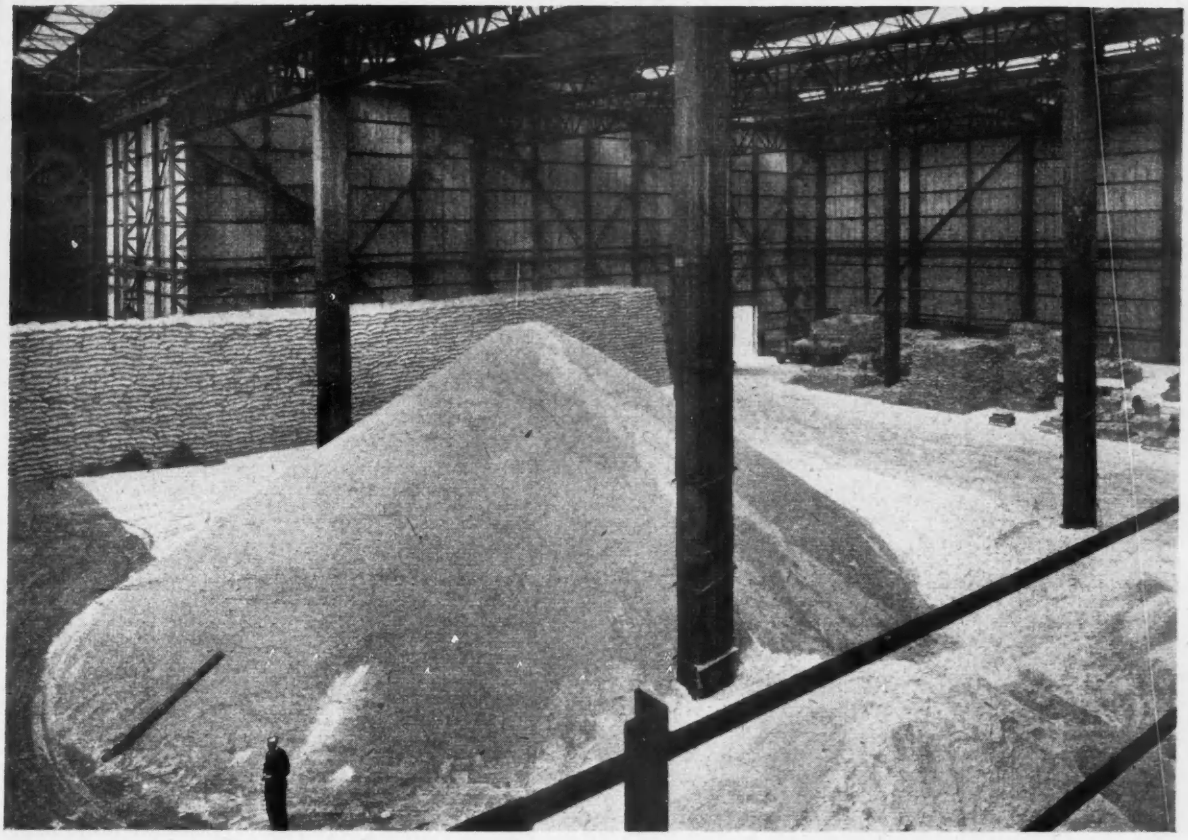



**DESIGNS PLACED FIRST (EQUAL). LINDSEY DRAKE, A.R.I.B.A., DENYS LASDUN, F.R.I.B.A., A. J. HARRIS AND W. M. JOHNS**

bridge. This bridge is composed of two simply-supported spans resting on soil cement abutments at the outer extremities with a precast "V"-shaped central support. The general construction method is similar to that for the single-span roadbridge.

*Design for footbridge.*—This bridge consists of a slab made up of four box beams side by side and tied together transversely at the cantilever extremities, at the support and at midspan. The slab sits upon two "Y"-shaped supports.





A mountain of raw sugar lying on Messrs. Tate & Lyle's new warehouse floor at Thames Refinery kept dry by–

# COLEMANOID

## LIQUID WATERPROOFER & HARDENER

The floor of this Warehouse, which is within a few feet of the Thames, was constructed with Colemanoid in the mass concrete mix, so that in spite of its proximity to the river it is bone dry. Incidentally Colemanoid has been used for many years throughout Messrs. Tate and Lyle's factories in other Warehouses to ensure dry floors. For further details as to how Colemanoid can help you with your flooring, waterproofing, acid, oil and alkali problems, write to me.

Cecil Kahn

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ST. MARY'S WORKS, CONNAUGHT LANE
ILFORD 1963

JOINERY WORKS:
GRESHAM WORKS, SOUTH NORWOOD
ADDISCOMBE 1264

BRANCHES
BRIGHTON:
16, UPPER LEWES ROAD
BRIGHTON 26694
SMALL WORKS DEPT.:
COPTIC STREET, LONDON, W.C.1
MUSEUM 3705

# FESTIVAL PLEASURE GARDENS

## Plans for Battersea Park

**From a correspondent**

NOW that the plans for all the main features in the Festival Pleasure Gardens have been approved, and work on the site is well under way, Festival Gardens Ltd. have announced details of the designers and architects responsible for the work.

The chief designer is James Gardner, O.B.E., R.D.I., F.S.A.I. In conjunction with the Presentation Committee of Festival Gardens Ltd., he has control over the design of all the buildings and other features, and he has been responsible for the general lay-out of the gardens. In addition, his own designs are being used for a number of the features. These include the "West End" Restaurant and Wine Garden; the Pavilion which will be used as an alternative to the Amphitheatre; a Stage facing in two directions so that it can be used either for open-air performances or for shows in the Wet Weather Pavilion; the Dance and Music Pavilions; the 80-ft. Fountain Tower dominating the entrance to the Amusement Area; and the Tree Walk—a slung walk through the trees leading up to a high platform from which there will be an excellent view of the whole gardens.

The other designers (in alphabetical order) are: Bruce Angrave, M.S.I.A., who is to design a number of features for the Tree Walk. Ferdinand Bellan is painting the murals for the Main Stage and Wet Weather Pavilion, and decorative panels at the entrances to the Gardens. Rowland Emett has drawn all the designs for a miniature railway (in the Emett style) which will run for nearly 500 yards along the South Side of the Gardens. In addition to the train itself, he has designed the Station near the South-East entrance, and a Snack Bar by the station at the western end of the railway. Lewitt-Him have designed a Crazy Clock. Standing 20-ft. high, it appears to be quite an ordinary clock tower—until the clock strikes. Then, doors and windows open and parts of the roof lift up to show a number of working models. Fred Millett is designing the cages, aquaria, stables and some other features for the Children's Zoo in the Gardens. He is also painting the fishing village scene which has been designed for the 130-ft. screen behind the Boating Pool.

### The Main Vista

John Piper and Osbert Lancaster have designed the "Main Vista." This feature, taking full advantage of the natural contours of the park, consists of a succession of pavilions and arcades, towers and pagodas, terraces and gardens, lakes and fountains, and stretches for about 250 yds. across the gardens from the main carriageway.

Guy Sheppard has designed the Riverside Theatre. This is a prefabricated structure of tubular steel scaffolding and fibrous plaster panels which can be easily dismantled and re-erected. The design is a pastiche of Regency, Victorian and Modern styles. He has also designed a Grotto representing the four elements of wind, fire, earth and water, in the form of four caves with ultra-violet lighting. For example, fire is represented by a pool of molten lava and various effects of flame and smoke suggesting the crater of a volcano.

Hans Tisdall has designed the entrance to the Amusement Park, and the three buildings round the entrance courtyard. The buildings themselves are simple in design, but the colour treatment gives an effect of fantasy.

The co-ordinating architects are Harrison and Seel, AA.R.I.B.A., who are responsible for working out all the practical details of the designs, and supervise all stages of the work from the designers' sketches to the completed buildings. They are also responsible for planning the water, electricity and other services for the site. They have designed the administration buildings, and have three features in the Gardens: the Boating Pool, Beer Garden, the Garden Tea Pavilion and Garden Long Bar, which face the central flower garden.

The landscape architect is Russell Page, F.I.L.A. Great attention is being given to effective landscaping throughout the Gardens, and every opportunity is being taken to emphasise the natural characteristics of the Park. Russell Page is concerned with plans for using floral decoration, shrubs and climbing plants in the treatment of many of the features, including the Main Vista; but he is mainly responsible for the central flower garden, where there will be a continuous display of seasonal flowers, and for the formal flower beds and fountains in the riverside strip in between the Main Carriageway and the river. He has also designed the special shops along the Main Carriageway, which will be the Bond-street of the Festival Gardens.

The architectural consultant to the chief designer is Roger K. Pullen, F.R.I.B.A., A.A.Dip. With James Gardner, he is responsible for a number of buildings in the Gardens, especially the Dance Pavilion and the Pierhead Cafeteria. In addition, Dalgliesh and Pullen are the architects for the two permanent features—the Amphitheatre and the Riverside Tea Pavilion—which will be continued by the London County Council after the Festival has ended.

### Snack Bar and Tea Garden

The other architects are: Arthur Braven, A.R.I.B.A., M.S.I.A., who is responsible with James Gardner for the Amusement Area Snack Bar, designed in a cheerful style to blend with its surroundings. Hugh Casson, M.A., F.R.I.B.A., Director of Architecture for the Festival of Britain Office, assisted by L. H. Gooday, has designed the English Tea Garden which is being built round the largest tree in the Pleasure Gardens.

Basil Duckett, D.F.C., A.R.I.B.A., has prepared the drawings of the de luxe Restaurant from James Gardner's sketches. Bernard Engle, F.R.I.B.A., F.I.A.A., has been appointed by the Worshipful Company of Brewers to design for the Festival Gardens the Bandstand Beer Garden—which is entirely in glass, reminiscent of the Crystal Palace—and the Main Vista Beer Garden.

Patrick Gwynne, L.R.I.B.A., who won second prize in the Festival Restaurant Design competition for the South Bank exhibition, has designed the Main Restaurant in the Pleasure Gardens. This is a semi-circular structure with tented roof. The most striking feature is the complete absence of masts inside. The tented roof—400 ft. long and 30 ft. wide—is supported by overhead cables. The "theatre boxes" each have a different coloured canopy, forming two-thirds of the spectrum, and giving a pleasing effect as one approaches the restaurant.

Laurence Kenchington, B.Sc. (Eng.), A.M.I.C.E., A.M.Struct.E., is the structural engineer for the Tree Walk and the 80-ft. Fountain Tower, both designed by James Gardner. The consultant engineer is C. V. Blumfield; the lighting consultant, L. Kalff; and the electrical consultant, H. E. Baker. The quantity surveyors are C. E. Ball and Partners; the contractors Dowsett Engineering Construction Ltd.; and the Garden contractors William Wood and Son, of Taplow.

NOTE.—All the features have been referred to by their working titles. The correct names for the features have not yet been agreed.

# THE ECONOMICS OF HOUSING

## A Housing Centre Talk

IN an address at the Housing Centre on December 12, Mrs. Layton, of *The Economist*, examined our national housing problems from an economic point of view and offered suggestions as to the broad lines along which, she thinks, we should act.

MR. IAN M. LESLIE, J.P., Hon. A.R.I.B.A., Editor of *The Builder*, who presided, said that Mrs. Layton was not only on the staff of *The Economist* but was a member of the Middlesex County Council and had had training and experience in housing management.

MRS. LAYTON began by asserting that the post-war housing problem was over. By that, she explained, she meant that the particular housing problem created by the war was virtually coming to an end. She showed that the demand for accommodation created during the years 1939 to 1950 would be about balanced by the end of next year—1,500,000 houses wanted and about 1,500,000 houses built or repaired, at the present rate of building. When we reached that point we should begin to enter on the long-term phase of our housing problem—the next ten to fifty years. That would include the demolishing of the slums and rebuilding them to what we considered normal housing standards to-day.

### High Level of Rents

After drawing attention to the age and poor state of repair of many of the older houses, Mrs. Layton suggested that housing lists were so enormous to-day because of the present level of rents. She asserted that as a whole rents were fantastically low. Personal incomes had risen—even allowing for direct taxes—to about 80 per cent. higher than in 1939 but over the same period rents had only risen about 12 per cent. There was no economic reason (although there were political reasons) for this gap between incomes and rents. People were spending twice as much as before the war on most things but only a quarter more on rent. It

was because the cost of housing to the tenants was kept artificially low by subsidies and rent control that the average family had much more money to spend. Naturally there was a great demand for Council houses on this basis. It was very difficult to compete with the subsidised Council house.

What sort of objectives should we have in the next phase of the housing policy? asked Mrs. Layton. She suggested these five:—

(1) Every family should have a dwelling. Roughly speaking, that would be achieved during the coming year.

(2) Every family should have a fit dwelling—and that involved slum clearance.

(3) Rents should be those that people can afford.

(4) There should be the minimum burden on the public purse—the taxpayers and ratepayers—that we could reasonably achieve.

(5) These objectives should be reached quickly.

Expanding these points, Mrs. Layton said that as there had been no national census of housing need we did not know how many houses would be involved in providing every family with a dwelling. She suggested that allowing for new building and replacement, conversions and adaptation, about four million houses would be needed by 1965. With the houses we should have built by the end of next year and with continued building at the rate of 200,000 a year, we should just about reach the four million by 1965. But by that time a lot of "new" houses would have become sub-standard. When we came to the question of replacement, we should be up against something much more difficult than we had experienced so far. We should then be up against the rent problem much more acutely.

**Costs in Relation to Rents**

Speaking of housing costs in relation to rents, Mrs. Layton said it was rather difficult to get any reliable figures about costs. The average cost of building a three-bedroom house was now something like £1,500, including land and building and might well be more. At that figure (and rising in some cases) rents were either too high for the poor family to pay or else the burden on the taxpayer and ratepayer was excessive. Before the war a reasonable rent for a Council house was 10s. a week. To-day £1 or 25s. would not be unreasonable. Some people said they could not afford to pay that, but she was not so sure. If we continued to build houses at the cost they were to-day and did not ask the tenants to pay an economic rent, the burden of the subsidy would become so heavy that local authorities would not be able to carry on. If we charged an economic rent we would be housing the people who could afford that rent but they would not be quite the kind of people for whom the housing subsidy was intended.

It was extremely difficult to persuade tenants of houses that were rent-controlled that, since their wage packet was twice as much as before the war, they should be prepared to pay a higher rent. Mrs. Layton referred to a recent survey of housing costs and rents in Scotland and said that for a three-bedroom house costing £1,730 to build in 1948, it was found that the average annual contributions to that cost were £23 from the Exchequer, £28 from the tenant and £29 from the ratepayers. She thought that was a fantastic situation to have got ourselves into. According to the recently-published L.C.C. figures the proportions of contributions to subsidised housing in London were the tenant two parts to the Exchequer's one and the ratepayers' one.

It was intended originally that the rate subsidy should be one-third of the Exchequer subsidy, but in some cases to-day it was equal to, and in a few cases the rate subsidy was more than, the Exchequer contribution.

**Speed the Essence of the Problem**

Mrs. Layton proceeded to say that speed was the essence of the housing problem. We could not be complacent at the rate of building which was going on now. Unfortunately we could not afford at the present time to devote more money or manpower to house building. We therefore had to get more from the materials and labour now available to us. She did not suggest that we should borrow, say, 50,000 labourers from the building of factories and other essential works.

"The present system cannot continue," she affirmed. "It is far too expensive, both to the tenant and to the ratepayer. It is also too unjust. It is too much a matter of chance whether a person gets a Council house, in spite of the priority lists; it depends on whether you live in the area of an authority which is keen on building, or whether there is land available, or whether you are living in conditions which satisfy the housing officer that you need a house."

**Some Remedies**

Then Mrs. Layton suggested courses of action which she thought would help to solve the problem. First, she said, she would abolish subsidies and increase family allowances and Old Age Pensions, distributing these allowances so that the people needing them most got them. She would then charge economic rents for houses. Then one might get a little sense into people's minds about the cost of housing.

Her second suggestion was that the subsidy should no longer be paid on the house but to the tenant, according to his means. That would involve universal rent rebates and charging an economic rent. It was done in America quite happily, and also in Australia. It was so unfair, she thought, that a family with an income of £15 to £20 a week should have a subsidised house. There would have to be some sort of means test, and that would probably be very unpopular.

Thirdly, Mrs. Layton said that gradually we must get to the position where the proportion of houses built by the local authorities would be reduced. She was not quite sure what that proportion should be, but she was sure it was time that a higher proportion of private-enterprise building should be allowed. "I am not concerned with the doctrine of either the Labour or the Conservative Parties on this point," she declared. "We must have some different yardstick for what we are doing in house building. If we go on as we are doing now, we shall ultimately, by reason of the growth of the burden on the local authorities and the ratepayers, reach a position where we shall have to alter the proportion. Why not do it now and avoid bitterness and a sense of frustration which must be felt if we continue the present system?"

There should be safeguards to keep down the cost of housing (we could not afford to put too many of our resources into expensive houses), and to maintain quality and standards of housing. By doing this she believed we should reduce the cost of housing. The probability was that with the competition of more private-enterprise house building the cost of local authority building would come down.

Mrs. Layton's next proposal was for the modification of the Rent Restriction Acts, with some safeguard ensuring that the increased income went to the ratepayers and the cost of maintenance. It would be infinitely cheaper to maintain existing houses in a good condition than to have to build new ones because the old ones were no longer fit for occupation. Fifth of Mrs. Layton's suggestions was that local authorities should be encouraged to build less extravagantly in housing standards. If we could get our houses better heated we should make better use of them and it might then well be that a house of 800 super feet would be as comfortable as the larger house of to-day. Mrs. Layton pointed out that in Scandinavia, where their standard of living was higher than ours, the houses were mostly smaller. Mrs. Layton also suggested that the standard of fittings installed in houses need not be so high as now, nor should so much be put in for the tenant. The house should be built so that the tenant could put in the fittings he wanted later and as he needed them.

Finally, Mrs. Layton asked if it would not encourage builders to build less extravagantly if there were some system whereby local authorities would be given permission to build more houses if they erected their houses more cheaply—with a possible safeguard of the standard of the houses, such as would satisfy the Dudley Committee.

## TRAINING TECHNICAL TEACHERS

### M.O.E.'s New Arrangements

NEW arrangements for the training of teachers of technical subjects have been announced by the Ministry of Education. Under the Emergency Training Scheme, which is now ending, a beginning was made in providing full-time training for experienced personnel from industry wishing to teach in technical colleges and similar institutions, including secondary technical schools. Three colleges in London, Huddersfield and Bolton, which have been in use for this purpose hitherto, are to be continued as part of the permanent training arrangements. These colleges will in future be maintained by the local education authorities concerned.

Courses, normally of one year's duration, will be open to persons not under 25 years of age who already possess appropriate technological or commercial qualifications in their special subjects, and who have had practical experience in industry or commerce. The qualifications include a degree or professional equivalent, Higher National Certificate, or the full Technological Certificate of the City and Guilds of London Institute. The college authorities will be responsible for the selection of the students.

Tuition will be free, and there will also be free board and lodging or a day maintenance allowance for non-residential students, subject to a contribution from the student in accordance with his financial circumstances. Students may also qualify for additional grants, including a personal allowance, vacation allowance, and dependant's allowance where appropriate.

# BOOKS

THE GOTHIC WORLD: A SURVEY OF ARCHITECTURE AND ART. By John Harvey. (London: B. T. Batsford, Ltd.) Price 30s. net.

HAVING surveyed a national culture in "Gothic England" and recorded the life of an English Gothic architect in "Henry Yevele," Mr. John Harvey now turns his attention to the wider field of international Gothic. To any sceptics who may say, or think, "What, another book on the art of the Middle Ages?" Mr. Harvey returns the convincing reply that he has not been able to discover any single work in the English language which deals with Gothic art alone and covers the whole of the geographical field. Although he calls this book "no more than a modest, interim compilation," he has covered the ground luminously, if in parts lightly, and will leave with many readers a better appreciation of that extraordinary period of history between the years A.D. 1100 to 1600, when there was a widespread urge towards unity in the Western World, not only in architecture but in the things of the spirit.

Turning away from a recent attempt to convert Gothic "from the sublime to the ædiculous," Mr. Harvey nevertheless holds that Mr. Summerson has done medieval studies a service by insisting that the leading feature of Gothic architecture is "not a system of material construction but the symbolic pointed arch." Pointed arches, Mr. Harvey recalls, had been known in the Saracenic world for several centuries, and by the "Arabs" had been introduced to Sicily; but until the end of the eleventh century the Arabic Mediterranean and Romanesque Europe were worlds apart. The Crusades provided the connecting link, and thus it was that in 1140 "two great churches at opposite ends of the Western World" (St. Denis and the Church of the Priory of the Holy Sepulchre in Jerusalem) came to "give Gothic a flying start." Within a generation these "first tentative outpourings" were "to coalesce into a coherent style" which for five centuries was to develop and spread throughout and largely dominate the Western World. Notwithstanding the importance of that "first step," the pointed arch, it is difficult, for some at least, to think of Gothic in its fullest flowering (apart from spiritual considerations) otherwise than as a system of material construction, and for confirmation of this now apparently heterodox view they will turn again to Lethaby's penetrating analysis of French Gothic, in which he claims that "among the chief gifts of the great French Gothic school to the world of architecture was, first of all, the theory of energetic construction, by which a cathedral became a stone cage with films of stained glass suspended in the voids, a marvellous jewelled lantern."

A difference of opinion about theoretical approach need not, however, disturb one's enjoyment of this book. In his earlier chapters Mr. Harvey gives a clear and absorbing account of building conditions in the Middle Ages—organisation, the Craft Guilds and Lodges, the men and the materials, building methods, etc. In the process he dispels a number of hoary beliefs—for example, that the medieval cathedrals were built spontaneously by unknown craftsmen out of their inner consciousness. In case after case he gives the names of the master masons (architects as we should call them to-day) who did the designing, and shows that working drawings or their equivalent were commonly in use. He shows, too, that a great deal of craft work was done not on the site itself but to order in shops—almost a medieval parallel of modern sub-contracting. He emphasises the mobility of the master masons and other artists, many of whom moved freely about not only from one work to another but from one country to another. The end papers of the book give maps showing the astonishing travels of Gothic artists from the twelfth to the fifteenth centuries, covering virtually the whole of Europe and ranging to the Levant and even as far as Mexico and Peru in the New World. Travel several hundred years ago would appear to have been much easier than in these days of passports, visas and Iron Curtains. (It is a pity, by the way, that one of these maps could not have been given as an inset plate, for the hinges of the covers overlay and tuck in a width of about ½ in. of map, making it awkward to follow.)

Mr. Harvey is no lover of the Renaissance and regrets that the "practically unlimited possibilities" of Tudor Gothic "never found full expression." Some will doubt those possibilities. Tudor, notwithstanding its great beauty, lacks the vigour of the earlier Gothic. The arch has become almost flat or had entirely disappeared. Clearly the end of the tradition was near. If the Renaissance had not intervened the "national style" might easily have become a sterile style, degenerating finally into banality. That, however, is idle speculation which has little to do with Mr. Harvey's thesis. In his later chapters he traces the astonishing ramifications of Gothic art throughout Western Europe and beyond, and many of his nearly three hundred photographic and other illustrations show the surprising consistency of the essential style with its distinctive national and regional variations. The book is a work of great scholarship, and fills a gap in architectural literature.

G. J. H.

SWITZERLAND BUILDS. By G. E. Kidder Smith. Illustrated. Pp. 234. (The Architectural Press.) 42s.

THIS IS CLAIMED to be the first book ever published in English which has traced so thoroughly the development and contribution of one of the world's most important sources of contemporary architecture. It is beautifully produced and profusely illustrated throughout by a collection of magnificent photographs, most of which were taken by the author himself. The book is a companion volume to "Sweden Builds," both of which were written as a result of an award made to the author by the John Simon Guggenheim Memorial Foundation.

The first 60 pages of this latest work are devoted to the fascinating building forms which the Swiss natives have contrived and perfected through the centuries as solutions to their precise shelter requirements. Although this architecture presents an extraordinary diversity of expression, it is a simple and truthful manifestation of the needs and materials of each locality. Having, so to speak, filled in the background of the past four or five hundred years, the author next presents an interesting section on modern architecture, in which the principles behind each type of building are explained, the explanations being amplified by illustrations of individual structures.

The remaining material is divided under the following headings: Private houses; churches; schools; hospitals; open-air baths; public buildings; industrial architecture.

The author is to be congratulated, not only for his able selection of interesting information, but also for the simple, non-technical way in which he has presented it. The traveller who seeks an intelligent understanding of what he sees in Switzerland will derive as much satisfaction from this book as will the architect and student.

ARCHITECTS', BUILDERS' AND CIVIL ENGINEERS' REFERENCE BOOK. Illustrated. Pp. 868. (George Newnes, Ltd.) 63s.

THIS IS the third issue of a work which has established itself as a standard book of reference and is of considerable usefulness to those concerned with the design, construction and equipment of buildings. The range of subjects covered being so wide, it has been necessary to arrange the information so that the user is able to refer quickly and with as little trouble as possible to details of any particular subject. This has been achieved by dividing the matter into 22 different sections including the following:—

Basic building materials; metals and plastics; heat and sound insulation; wall, floor and roof finishes; structural steelwork and piling; reinforced concrete and brickwork; fire resistance; metal windows; special purpose buildings and equipment; contractors' plant; formwork and scaffolding; electric services; gas services; lighting, water supply and sewage disposal; heating, ventilating and air conditioning; lifts; cleaning, washing and drying equipment; kitchen equipment.

The section on "Progress and Development," which was a special feature of the last issue, has been included in this new volume, and might well be carried on in future issues, for it is always interesting to read of new methods and devices which have been introduced.

At the front of the book appear several special articles, contributed by various writers, indicating trends of development in different spheres. Exhibition architecture is dealt with by Mr. Douglas L. Dick, F.R.I.B.A., and Mr. S. P. Kernahan, B.Sc., has contributed an article on the activities of the Ministry of Works. "Training in the Building Industry" is the title of another interesting contribution by the late A. L. Peyman, O.B.E. Further articles deal with new developments in surveying instruments and methods of prefabrication in large buildings.

The book also contains a comprehensive list of manufacturers' names and addresses and descriptions of their products.

## BOOKS RECEIVED

A DESCRIPTIVE CATALOGUE OF BOOKS ON CIVIL, MUNICIPAL, STRUCTURAL AND SANITARY ENGINEERING AND ALLIED SUBJECTS. (London: Books and Careers.) Price 6d.

THE WORK OF OSCAR NIEMEYER. By Stamo Papadaki. (London: Chapman and Hall.) Price 68s.

THOMAS ARCHER. By Marcus Whiffen. (London: Art and Technics.) Price 8s. 6d.

RAILWAY ARCHITECTURE. By Christian Barman. (London: Art and Technics.) Price 15s.

BUILDING MATERIALS. By Cecil C. Handisyde. (London: Architectural Press.) Price 25s.

⁂ *Books reviewed in these columns may be obtained on application to the Publisher, "The Builder," 4, Catherine-street, Aldwych, W.C.2. Cash should accompany the order.*

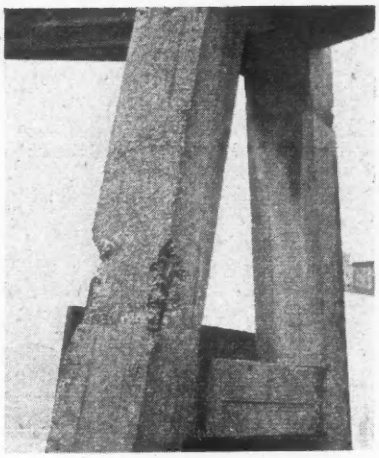
# A REINFORCED CONCRETE GANTRY

## Some Notes On Repair Work

THIS Thames-side crane gantry was erected about 25 years ago. Examination of the structure in 1948 showed that bad spalling of the concrete had been developing for a considerable period in all parts of the structure, the effect being particularly bad on that half of the gantry nearest to the river.

The breakdown of the concrete was due to two main causes: (a) irregular proportioning and poor compaction of the mix within the formwork; (b) bad placing of the reinforcement resulting in the provision of inadequate cover.

This lack of adequate cover, in association with the poorly-compacted and porous concrete, resulted in the continuous oxidation of the reinforcing bars and stirrups and the consequent disruption of the adjacent concrete. This condition may be seen in Fig. 1, which gives a general view of the upstream arm of the structure. The irregularity of the mix and the workmanship of placing is also clearly evident in the web. Figs. 2 and 3 show one of the quayside supporting "A" frames in which bars can be seen lying actually at, or just below, the surface of the concrete.



Figs. 2 and 3.—The quayside supporting "A" frames in which bars can be seen at or just below the surface of the concrete

### Repairs in Two Parts

The work of repair had to be divided into two parts, of which the first was of an exploratory nature whereby the extent of the damage and consequently the amount of repair work necessary could be assessed. It was obvious from the general appearance of the structure that the amount of concrete which would have to be cut back and cleared away might be considerable and hence it was possible that the compression flange of the cantilever might be dangerously weakened. There were no drawings or calculations available as the firm which had carried out the original work no longer existed. By chance, however, it was learned that the following stresses had been used in designing: steel tensile, 16,000 lb./sq. in.; concrete compression, 600 lb./sq. in. An examination of the tensile belt of the cantilever showed that sufficient steel existed to ensure that the tensile stress would not exceed 20,000 lb./sq. in. at 50 per cent. overload, assuming that 20 per cent. of the steel had become ineffective due to corrosion.

The exploration showed that any steel at a greater depth than two inches from the concrete surface was in good condition and that the quantity present would allow the outer bars to be completely removed without increasing the stress in the remaining steel beyond the safe limit. The compression flange of the cantilever could not be examined by cutting away without risk arising. It was therefore decided to support the overhung section by pinning it up to a heavy box girder laid along the upper flange and anchored on the far side of the second "A" frame.

The Steel Scaffolding Co., Ltd., having erected the necessary scaffolding, the work of cutting away the faulty concrete was begun. This was done with pneumatic chisels, which were used also for scaling the oxidised bars. In general the removal of 1½ in. to 2 in. of concrete was all that was necessary to expose normal concrete and steel on to which an application of fresh material could be made.

Fortunately no steel had to be replaced, as only the outer bars were affected and these had suffered a loss of area of less than 25 per cent. at the points of worst attack.

### Chief Points for Attention

In repairing the structure the chief points to be observed were: (a) The provision of a good key on to the old work; (b) the application of a sound, well-designed and dense concrete mix; and (c) the compaction of this concrete to the fullest extent within the formwork. It was also important that the mix should not be unnecessarily rich, as this would produce shrinkage and induce shrinkage stresses.

Some of the "A" frames were filled in solid and an additional cover of two inches was given over all other surfaces. Where the old work was very rough in texture, and where defective concrete had been cut away, no extra key was provided nor were any binders employed. However, on all surfaces where the bulk of the new concrete was small, such as the "A" frames which were not filled in and the vertical face of the top flange where an increase of 1½ in. was made over the entire length on each side, a special key was provided by the use of a proprietary liquid solution.

A creamy slurry was made of 1½ parts of fine, clean sand to one part of Portland cement, by volume, gauged with sufficient Cemprover No. 4 diluted with an equal volume of water to provide the correct consistency. This slurry was well brushed into the freshly cleaned surface of the concrete and on to any exposed steel, and stippled with a banister brush to provide a keyed texture. This was allowed to set for 24 hours or until quite hard.

The members of the "A" frames were separately concreted after the application of

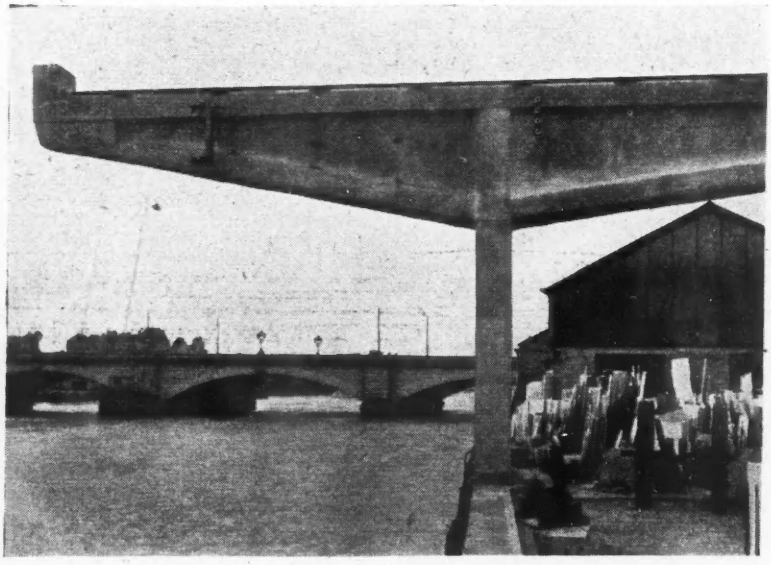


Fig. 1.—Corrosion of bendings in top flange of western cantilever

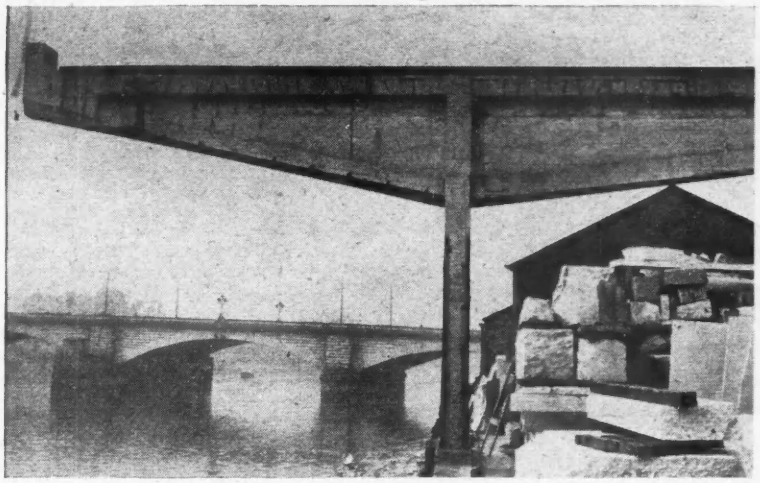


Fig. 4.—The finished gantry

the Cemprover No. 4 key coat. The mix was of the following proportions:—

| | |
|---|---|
| Coarse aggregate $\frac{3}{4}-\frac{3}{8}$ | 4.55 by weight |
| Fine aggregate all pass No. 14 | 1.45 by weight |
| Cement | 1 cwt. |
| Water/cement ratio | .45—.5 |
| Slump | Nil |

It will be noted that the mix was gap-graded. This was done to produce a high density (148 to 150 lb./cu. ft.), and at the same time secure good workability and no segregation under vibration.

Where the bulk of concrete was sufficient, as, for instance, the infilling of the "A" frame, an external vibrator was used. Preferably an internal vibrator should have been employed, but none was available at the time. The concreting was done in lifts of 3 to 4 feet, and every endeavour was made to get watertight joints between the shutters and the existing work. This was not always fully successful and occasionally patching had to be done when the shutters were removed. This patching consisted of working into coarse aggregate a mortar of the richness found in the concrete. No serious consequences will follow this type of patching provided it is done before or soon after the final set of the cement, i.e., three or four hours after placing. The use of vibration makes it possible to strip the formwork away from the concrete almost immediately after placing and thus any slightly faulty work can be put right at a very small cost and without ill effects.

The treatment of the web had to differ from that of the other sections because of the impossibility of getting concrete into forms fitted hard up under the top flange. It was, therefore, decided to Gunite this part of the structure, as well as the underside of the web. This work was carried out by Concrete Proofing, Ltd., as a sub-contract.

The finished gantry is illustrated in Fig. 4.

The consultant engineers were Messrs. Cowdell and Stewart, and the contractors Messrs. John Mowlem and Co.

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**Road Surfacing**

Road Note No. 5 (second edition) "Types of Road Surfacing and Maintenance using Tar or Asphaltic Bitumen" was published on December 8 for the D.S.I.R. by H.M. Stationery Office, price 1s. 6d.

# U.K. NOVEMBER EXPORTS

## North American Figures Up

THE President of the Board of Trade, Mr. Harold Wilson, has announced that the United Kingdom exports again increased in November, reaching a provisional figure of £211.9 million. This was £9.7 million above the record October figure, and £35.0 million above the average for the first ten months of the year. The monthly average of exports in the two months October-November was 14 per cent. more than in the third quarter and 21 per cent. more than in the first half of the year.

Imports were also higher at £234.5 million (provisionally). With re-exports in November at £10.3 million the excess of imports (valued c.i.f.) over exports and re-exports (valued f.o.b.) was £12.3 million, a slight increase over the October figure of £11.4 million, but well below the average for the first ten months of the year (£29.3 million).

The provisional value of imports during January to November this year was £2,364.3 million compared with £2,083.2 million during the same period last year, and total exports were £2,058.7 million this year against £1,684.7 million last year. The excess of imports to date was therefore £305.6 million this year compared with £398.5 million last year.

**Exports to North America**

The provisional value of United Kingdom exports to the United States in November was £13.8 million ($38.5 million), which was £0.6 million more than the October record figure, and £5.0 million above the average for the first ten months of the year. Exports to Canada were £14.5 million (equivalent to U.S. $40.6 million), being £2.4 million more than in October and £4.4 million above the average for the first ten months of the year.

The combined figure of exports to North America in November was equivalent to U.S. $79.1 million, compared with $70.5 million in October and an average of $52.9 million in January-October, 1950, bringing the average for the year to date to $55.3 million.

# INCENTIVES

## Text of Settlement between Employers and Operatives

THE text of a Settlement between the National Federations of Building Employers and Operatives was published on Friday last. It will be reported to the National Joint Council for the Building Industry on January 11 next, with a view to any adjustments of that Council's agreement which it may deem to be necessary. The scheme has the approval of the Ministry of Works.

The Settlement relates (a) to Incentives Payments, and (b) to Sub-contracting for Labour only. Under (a) new machinery in the form of regional joint advisory panels is to be set up to give guidance to employers and to operatives on the initiation and operation of incentive schemes. It will be open to employers or operatives to bring matters in dispute relating to incentive schemes to the attention of the advisory panels.

Under (b) it is aimed to bring under more effective control the piecework type of labour-only sub-contracting; the essential factor, here, is that the individual labour-only sub-contractor must be prepared, if called upon, to prove his *bona fides*.

Here is the full text of the Settlement:

THE FOLLOWING SETTLEMENT between the Federations of Building Employers and Operatives is being reported to the National Joint Council for the Building Industry on January 11, 1951, with a view to any adjustments of that Council's Agreement which the Council may deem to be necessary.

### GENERAL PRINCIPLES CONCERNING INCENTIVES

Having reviewed the incentives position, the parties have jointly reached the following conclusions:—

(1) Experience of operating the 1947 Settlement has shown that well-organised schemes of incentive payments have resulted in increased production as well as higher earnings;

(2) Therefore, provided that the best practice is more generally followed, the Federations on both sides are in favour of extending, where practicable, the system of bonus payments related to output. Subject to the modifications and additions contained in the present document, they confirm and renew the principles set out in the 1947 Settlement (which, as so modified, will be reprinted as part of this Settlement).

(3) While continuing, and endeavouring to extend the operation of, the main principles of the provisions in the 1947 Settlement, it is recognised (a) that the incentives system is still experimental in this industry and the process of improving and adapting it must be carried out in stages; (b) that, at the present stage, it is undesirable to attempt to lay down a precise and detailed scheme on a national basis (and for the time being is probably impracticable on a regional or even a local basis).

(4) At the present stage the main task must therefore be to provide more effective machinery for ensuring (i) that the agreed principles are well understood by building firms and their operatives, (ii) that bonusing arrangements are on a satisfactory basis

(yielding higher earnings for higher output), and (iii) that such satisfactory schemes of bonusing become general practice. It is recognised that both sides have a joint interest in achieving these objects.

## NEW MACHINERY: REGIONAL JOINT ADVISORY PANELS ON INCENTIVES PAYMENTS

(5) In furtherance of the principles stated in (1) to (4) above, it is agreed that, although the decision to operate a bonus scheme will remain the responsibility of the individual employer and although the arrangements in furtherance of a scheme will remain as between the employer and his operatives on the site, the Federations will set up in each region special Joint Advisory Panels on Incentive Payments (hereinafter referred to as "Incentives Payments Panels") from which guidance can be sought in the following circumstances:—

(a) Where the operatives on a site are aggrieved by the bonusing scheme operated there, they may request the district organiser of their trade union to discuss the position with the employer. If no settlement follows from such discussions then either the district organiser or the employer may report the disputed issues to the appropriate Incentives Payments Panel for that region, which will examine the facts and give guidance thereon to those concerned. (Those presenting the facts to the Panel must include operatives from the site itself.)

(b) Where the operatives on a site are aggrieved because of the absence of a bonusing scheme and seek advice accordingly from the district organiser of their trade union, he may discuss with the employer the reasons for the absence of a scheme and, if they are unable to agree about the possibilities of introducing a scheme, may report thereon to the appropriate Incentives Payments Panel for that region, which will ascertain the employer's position and give guidance accordingly.

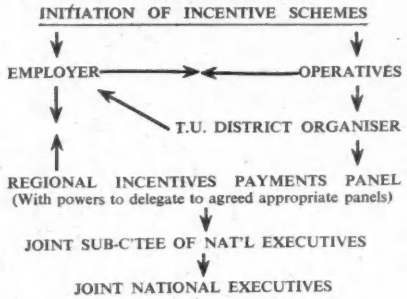
(c) Where an employer is aggrieved by non-co-operation of his operatives (or a section of them) in the starting or carrying-out of a bonusing scheme he may report the matter to the appropriate Incentives Payments Panel for that region, which will examine the facts and give appropriate guidance thereon to those concerned.

It is to be clearly understood that, if a scheme is in operation and no requests are made to the district organiser of the trade union, there will be no question of intervention by Regional Incentives Panels. Similarly an Incentives Panel will not approach employers concerning the absence of a scheme unless it receives a report from the district organiser of the trade union whose members are involved. On the other hand, it will be open to an employer needing guidance as to the feasibility of operating a scheme to seek such guidance direct from the appropriate Regional Incentives Payments Panel.

In the case of certain large cities, or where otherwise jointly deemed desirable, Regional Incentives Panels shall be empowered to delegate their functions to such Panels as they agree to be appropriate.

(6) It shall be open to Regional Incentives Panels to make joint submissions upon problems of general principle arising from cases reported to them, to the sub-committee of the Executives provided for in (8) below.

(7) In view of the setting up of the new Incentives Panel machinery it is agreed to discontinue the existing provision that particulars of schemes have to be lodged with the Regional Employers' Secretary.




## PROVISION FOR REVIEWING THE ARRANGEMENTS

(8) The foregoing agreed arrangements being regarded as still on an experimental basis, it is agreed to appoint a Joint Sub-Committee of the Executives of the Federations on both sides (of five each side with officials) charged with the duty of reviewing the progress made and rendering reports to the full Joint Executives concerning any further modifications of the scheme (including its machinery) which they might, from time to time, deem desirable.

The above Joint Sub-Committee shall be open to receive submissions concerning cases involving problems of general principle or joint policy—when put forward either by joint references from Regional Incentives Payments Panels or by any of the national parties to this agreement—but it shall be no part of its duty to hear evidence on detailed cases. The Joint Sub-Committee shall have power (a) to give guidance, on problems of general principle, in the manner it deems most appropriate; (b) to secure professional advice; (c) to call the full Joint Executives together where that is found necessary at any time for the purpose of endeavouring to resolve problems of joint national policy or considering amendments of the scheme.

## SUB-CONTRACTING FOR LABOUR ONLY

(a) The Employers' Federation will issue a pronouncement to all their members that they share the view, strongly urged by the Operatives' Federation, that the piecework type of labour-only sub-contracting is liable to abuses and, provided that *bona-fide* sub-contracting (whether including materials or not) is adequately safeguarded, should be under more effective control. The essential factor in such control is that the individual labour-only sub-contractor must be prepared, if called upon, to prove his *bona fides*.

(b) The Operatives' Federation will at the same time record, and intimate to all concerned, that their objection to labour-only sub-contracts does not extend to the genuine type of such sub-contracting, customary in the building industry, in which *bona-fide* firms are the sub-contractors.

(c) In the light of the pronouncement indicated in (a) and (b) above, both Federations agree that cases of doubt or difference as to the genuine character of the sub-contract or the *bona-fide* status of the sub-contractor, shall be brought before Local Joint Committees (or, where no Local Joint Committee exists, before the Regional Joint Conciliation Panel) which shall have the primary duty of assessing the merits of each case and dealing with it accordingly. Thereafter any reference arising would be for the ordinary conciliation machinery.

## MESSAGE from MINISTER OF WORKS

The following message has been sent by the Minister of Works, Rt. Hon. Richard Stokes, M.C., M.P.:

"I have long been convinced that sound incentive schemes can make a major contribution to higher productivity and lower costs in building generally. Incentives can, of course, be successfully operated only on the initiative of the industry and with the full support and co-operation of both employers and operatives. I therefore welcome most warmly this new agreement, not only as an important step forward towards the higher productivity in building which is essential to the national economy, but also as a signal instance of the determination of both sides of the building industry to grapple with the problem of increasing building productivity.

"Now that both sides of the industry have reached this agreement, as the Minister of Health said on December 15, it should be possible to obtain more houses for the same amount of capital expenditure; it continues to be the policy of the Government to build as many houses as can be built within the money limit set by the capital investment programme and the available supplies of materials.

"Harder work means bigger output and therefore more building. So let us get on with the job."

## BUILDING IN LONDON

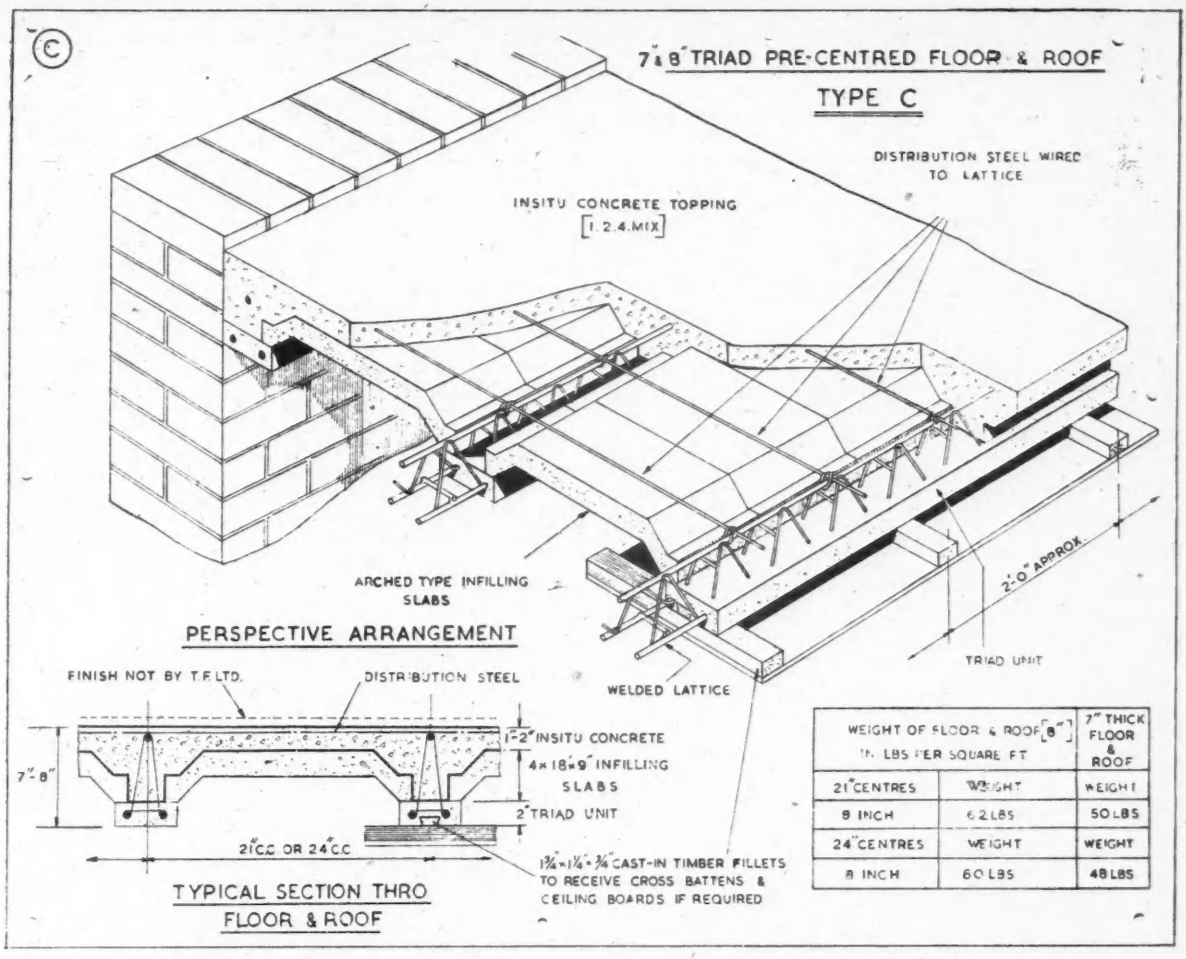
### Outlook for the New Year

THE President of the London Master Builders' Association, Mr. R. R. Costain, C.B.E., has sent the following Christmas message of good will to his members:—

"As Christmas approaches, and my term of office nears its close, I should like to send you, and through you to the members of your area, my best wishes for the season of traditional good will and for the New Year which will follow it—Festival of Britain Year, remember, when we shall all be on our best behaviour as hosts to the world beyond the seas. We still live in highly uncertain times, and no one knows what the New Year will bring forth. For us as builders it means work in plenty, though the form of that work may well change with changes in the economic and political situation both at home and abroad.

"Will the emphasis be on houses or on factories? Shall we be asked to release labour for rearmament? Will materials be more plentiful? These are a few of the questions on which I can give little guidance at present. We have had a good year at the L.M.B.A., and I thank you most cordially for the loyal way in which you have supported me during my presidency. Our numbers remain steady at round about 2,000, and few who matter in the London Region are now outside our ranks. The financial position of the Association is sound, and we are supporting, by prizes and donations, both the Schools of Building, which do so much to promote the education of the young men in our industry, and the various charitable associations connected with its many branches.

"I wish I could say that we faced a record year. It is quite possible that we may, but prophecy is beyond the President of the L.M.B.A. Suffice it to say that we have solid achievement behind us, an earnest of the even more solid achievement to which we look forward in the future."




| WEIGHT OF FLOOR & ROOF [8" IN LBS PER SQUARE FT | | 7" THICK FLOOR & ROOF |
|---|---|---|
| 21" CENTRES | WEIGHT | WEIGHT |
| 8 INCH | 62 LBS | 50 LBS |
| 24" CENTRES | WEIGHT | WEIGHT |
| 8 INCH | 60 LBS | 48 LBS |

# THE ROYAL FESTIVAL HALL

## Roof Construction

A SYSTEM of precast concrete flooring units has been used in the construction of the roof of the Royal Festival Hall on the South Bank.

The roof of the Hall consists of two reinforced concrete skins, approximately 2 ft. apart. In the space thus formed is placed a 2-in. glass wool blanket for insulation purposes. The top surface of the outer skin is finished with a layer of insulating board and copper sheeting.

The lower roof is composed of an 8-in. overall depth of reinforced concrete slab using standard Triad beams spaced at 21-in. centres. Between these beams standard flat centering slabs are spaced and the whole then covered with 4-in. thick in situ concrete.

Additional reinforcement in the in situ concrete was included by the consulting engineers, Messrs. Scott and Wilson, in order to carry the 6-in. and 4-in. thick dwarf walls that support the upper roof. The Triad beams in this roof are placed directly on the steel roof trusses.

It was required that the upper roof be as light as possible in order to reduce the deadweight on the main building structure to a minimum. A thickness of 4 in. of concrete was specified to give the necessary sound insulation. In addition, it was necessary to make provision for the glass wool insulation passing immediately underneath this upper roof. In order to accommodate these requirements Triad beams were produced with a 1¼-in. notch in the soffit at each end, and special infilling slabs were cast 2 in. thick with a ¾-in. rebate in

**In situ concrete being laid on precast units. Note provision of vertical reinforcement to carry upper roof**

the underside at each end to rest on the sole board of the beams.

In order to provide the fixing for the insulating board and copper finish to the roof, the normal mild steel rod compression member of the beam was replaced by 1-in. by 1-in. by ¼-in. mild steel channel in which was fixed a timber batten. It was necessary that these battens be at 2 ft. 6 in. centres to facilitate fixing of the protective covering and the centres of the beams were therefore established at this spacing.

The roof is carried on 6-in. and 4-in. thick concrete walls at 6 ft. 3 in. centres and is designed to carry a superimposed load of 30 lb. per sq. ft.

All precast components were hoisted a height of 115 ft. on a normal builders' platform, the beams weighing only 145 lb. each, and the infilling slabs 28 lb. each.

The architect for the Royal Festival Hall is Mr. Robert H. Matthew, A.R.I.B.A., Chief Architect, L.C.C. The main contractors are Messrs. Holland & Hannen and Cubitts, Ltd.

# THE RUBENS PAINTINGS

## Cleaning and Restoration Complete

THE Rubens paintings which formed the ceiling of the former Banqueting House of the Palace of Whitehall (now the Royal United Service Museum) were taken down at the outbreak of war and removed for safety to a manor house near Beaconsfield. Because of their size they had to be cut into sections, 20 in all, before they could be passed through the long Whitehall windows.

When they were returned to London in 1945 the opportunity was taken by the Ministry of Works to carry out cleaning and restoration. The Orangery of Kensington Palace was used as a studio. The work has taken four and a half years.

Eleven of the 20 sections are in the course of replacement in the Royal United Service Museum. The remaining nine form the present exhibition in the Orangery.

Included in the work of restoration has been the repair of damage caused more than 300 years ago—before the canvases left Rubens' Antwerp studio. The paintings, for Charles I, were started in 1629 and finished in 1634. The Banqueting House was not then ready. The canvases were rolled up, their paint still fresh, until 1635, when they were examined, hastily retouched and shipped to England. The numerous narrow streak-like scars then formed, all running parallel with the roll, have now been made good by the Ministry's artist craftsmen.

The removal of the much darkened coating of varnish in the present operations has revealed a number of other defects. Colours used by early restorers in hasty retouching had changed in tone and had become conspicuous against the original colouring. In some instances the restorers had carried their recolouring unnecessarily far and had painted over the surrounding parts.

### Cracked and Flaked Paint

Irregular scars were found in the old paint, apparently caused when canvases tore away at their edges and sagged under their own weight. Portions of paint had cracked and flaked away under the continual strain at points where canvas tabs, fixed to the paintings, had been used to give support. There were old tears in the canvases, and in one case a large patch of new canvas, carefully chosen to match the old, had been inset and part of the body of a cherub repainted. This was one of the few early restorations found to be satisfactory.

In a few places evidence was found of alterations made by Rubens in the composition. In the course of time the overpaintings, thinning out, had revealed the original outlines of the parts Rubens had discarded.

In the restoration work just completed all rough or broken parts, cracks or holes in the canvases have been filled and smoothed off with plastic stopping, and retouched in oil colouring. Incorrect retouchings have been removed and done afresh. Where the earlier restorers had carried their paint unnecessarily far this has been removed and the original work exposed. In all new retouching the paint has been built up layer by layer of correct colours, allowing plenty of time for each coating to dry out.

### Complete Restoration

The paintings were taken down in 1688 and relined on new canvas, and again in 1906, when they were mounted on plywood panels. The recent treatment, however, appears to be the only one in which the painted surfaces have received complete over-all cleaning and restoration.

The total area of picture surface of the ceiling is 2,478 square feet. The great centre oval is 32 ft. by 20 ft. 6 in., the two long flanking rectangles are each 39 ft. 6 in. by 7 ft. 10 in.

The panels have now been strengthened with new woodwork and each edge reinforced by bolted rolled steel angle-pieces. These will be bolted together through upstanding flanges to make rigid connection between adjoining panels. It is hoped that the panels will be back in postion in the Royal United Service Museum early next year.

# BUILDING RESEARCH, 1949

## Increasing Use of Full-scale Tests

ONE of the developments noted in "Building Research, 1949," published for D.S.I.R. (H.M.S.O., price 3s. net), is the increasing use of field work and full-scale tests. Items of this kind on which the Building Research Station is engaged include soil mechanics, stresses in building structures and bridges, and the heating, ventilation and sound insulation of houses. The post-war extension of the activities of the station is achieving an increasing rate of progress of work on the research programme. The Building Research Board notes, however, that difficulties of recruiting and training staff still make it impossible to carry on active work on many items. The work and services of the Station are becoming more widely known to the industry, the number of inquiries received on building and civil engineering problems and requests for minor investigations on repayment having increased. An important development in 1949 was the opening of the branch laboratory in Scotland. The Report of the Director of Building Research describes the year's work under more than 60 headings.

MATERIALS: Methods of impregnating porous stone surfaces with molten wax as a preservative have been investigated and the process is to be tried out on a number of museum exhibits. Tests on samples of Continental roofing slates proved only two out of seven samples to be suitable for use in this country. Users are again advised to ask suppliers for a test report. Many new flooring materials have been tested at the request of the manufacturers and quicker testing methods are being devised.

SITE-MADE CONCRETE MIXES: Investigations have been carried out on building sites into the factors affecting the variability of the quality of site-made concrete. Striking improvements were obtained with better control. A simple instrument has been developed to measure the moisture content of sand, which will improve control of the water-cement ratio.

BUILDING CONSTRUCTION: In order to study heating by air circulation, a block of four houses was constructed. They were completed in March, 1949, and are now being used for experiments. Building work has proceeded on two blocks of flats which will be used in a full-scale investigation of sound insulation.

The dry spring and summer of 1949 caused damage to many houses on clay sites owing to shrinkage and settlement. Field studies of the earth movements involved have been continued and the possibilities of using short bored pile foundations instead of deep wall footings on shrinkable clay soils have been investigated.

SOIL MECHANICS: In addition to this work the study of soil mechanics has included consideration of the bearing capacity of soils in relation to foundations for large structures, the making of excavations in difficult ground, and the stability of earth banks.

DESIGN AND PERFORMANCE OF STRUCTURES: Investigation of the behaviour of composite steel-reinforced bridge deck systems has continued and has been concerned mainly with the construction and testing of a slab-and-girder-type bridge deck slab. Research on the strength of brickwork in walls and piers has been carried out to provide data for more accurate estimation of the strength of brickwork under working loads.

Work has also been done on testing the effects of vibration from road traffic and machinery on buildings, the load-carrying capacity of thin concrete walls and the strength and stability of thin reinforced concrete domes and barrel vaults. An economical design method for welded steel frames has been developed.

EFFICIENCY OF BUILDINGS: Studies have begun on the functional design requirements of types of buildings for special purposes, e.g., schools, factories, and hospitals. The large-scale heating trials in occupied and unoccupied experimental houses have continued, with improved recording equipment; this work is now being supplemented by measurements of the temperatures maintained in ordinary houses in different parts of the country. The research on lighting has reached a stage at which it is possible to link its results with the study of building types. From the results of measurements of sound insulation in buildings, carried out both in the field and in experimental flats, the sound insulation of most practical types of construction can be predicted with reasonable accuracy, and more basic research is now being initiated. Work on plumbing has included tests on one-pipe systems and investigations on the problem of back-siphonage.

An account of the work of the Colonial Liaison Officer describes an active service of information on colonial building problems which is rapidly being established.

# STREAMLINING THE QUANTITIES

## Some Comments on Mr. Forster's Article

*The article on "Streamlining the Quantities," by Mr. T. Forster (in our issue for December 8), has drawn some comment. A selection of correspondents' views follows:*

### Some Points for Quantity Surveyors

TO THE EDITOR OF *The Builder*.

SIR,—Mr. T. Forster's article entitled "Streamlining the Quantities," in your issue of December 8, is full of practical common sense, and I consider that the following points in particular are worthy of serious consideration by all quantity surveyors:—

(1) As speed, without sacrificing accuracy, is the essence of the quantity surveyor's work, it would be a great advantage to all concerned if a standard set of descriptions of work of normal construction could be universally agreed.

(2) Most public authorities and firms in private practice have compiled a standard set of preliminary items and preambles which they suitably amend for each job. Could not such a standard set be universally agreed? Contractors would then be provided with the necessary excuse for not reading the preliminaries and preambles, which, in any event, they rarely do. Any special items would be included at the end of the preliminaries with the contractor's attention specially drawn thereto. Standardisation of descriptions would eliminate the fact that all surveyors describe the same items slightly differently. If every surveyor described the same thing in the same words, it would greatly simplify the estimator's work and the movement of staff from one firm or public body to another.

(3) I think it is the bugbear of most principals in firms that so much time has to be spent in editing drafts of bills of quantities before they can be printed. This work would be considerably reduced by a standard set of descriptions.

(4) Most principals in private practice at one stage in their career endeavour to draft perfect bills of quantities for various typical jobs in order that they can circulate them for their assistants to follow. Very few of us get the time to complete this task, but those of us who have managed it know of what inestimable value such a document is in an office.

(5) There is great truth in the saying that "Short accounts make long friends." I would go further and say that short bills of quantities obtain cheap prices, so long as it is made quite clear to the estimator what he is expected to include in his rates for each item. If an average bill of quantities is inspected after a contractor has priced it, it will be seen that 25 per cent. of it consists of items that contribute only 5 per cent. to the total estimate. A carefully prepared approximate estimate is usually within 10 per cent. of the lowest tender received. This may take one day to prepare, while the bill of quantities for the same job may take six weeks. A curtailment is, therefore, obviously necessary in the number of items that the Standard Method of Measurement states have to be measured separately.

(6) The Code for Measurement of Building Work in Small Dwelling Houses is, of course, a step in this direction, but the trade of Joiner needs considerable revision. I have yet to meet a surveyor or builder who likes his windows, door frames and window frames enumerated.

(7) As the present trend in standardisation of buildings, specifications, etc., proceeds apace, surely now is the time for quantity surveyors to review their methods and proceed in the same direction.

In stressing the foregoing points, it should not, of course, be overlooked that every job is different and consequently in every bill of quantities there have to be particular items relative to that particular job. There is no doubt, however, that the majority of items in a bill of quantities could be standardised and that a lot of them could be eliminated altogether without in any way detracting from its usefulness from the estimator's point of view.

G. D. R. ELLSON, F.R.I.C.S.

7, Catherine-place,
London, S.W.1.

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TO THE EDITOR OF *The Builder*.

SIR,—Mr. T. Forster's article in your current issue is certainly of interest, but possesses certain weaknesses. I would like to make the following observations:—

(*a*) Verbose descriptions in bills of quantities occur for two reasons: the first is the ever-increasing tendency on the part of some contractors to find what perhaps might be called "legal loopholes" in the bills; the second and more important reason is that a specification no longer forms part of the contract. Unfortunately, Clause 5 of the R.I.B.A. Form of Contract requires "materials and workmanship to be as described in bills of quantities." As long as that clause remains bills will continue to be verbose.

(*b*) Builders' Associations unfortunately refuse to price jobs without a bill of quantities if the total cost of the job exceeds £1,500. I think this limit is too low; I think it could be raised to £5,000, or even abandoned completely for housing work.

The above policy of builders, coupled with the ever-increasing house building by contract system adopted by the Government, has spread the available number of competent quantity surveyors too thinly over the industry, with the consequent delay in settlement of final accounts.

(*c*) Of course, even surveyors in decadent England can produce estimates for the largest jobs on a few sheets of paper in a few days, but, and this seems an important point to me, the less detail a builder goes into in his estimate the bigger his probable profit margin will be; which might account for why Mr. Forster says few builders in America "seem in the red."

(*d*) Mr. Forster says lists of tenders in America show no greater disparity of price than they do in your journal. I quite believe that, but I submit the difference between highest and lowest tenders on a job has probably nothing to do with the amount of detail a builder has gone into: it is almost certainly due to the amount of work he has got on at the time.

(*e*) I think that in recent years quantity surveyors have brought up very badly the present generation of architects. Quantity surveyors in the past have produced bills from very incomplete drawings—the result is architects seem to refuse more and more to get details out at an early stage. Result is an ever-increasing number of variations.

I also feel that contractors often encourage architects to vary a job in order to introduce non-schedule items into the contract. Contractors may tend to overlook that variations may delay the job and these days certainly delay the issue of the final certificate until long after the "period of final measurement" for reasons set out under (*b*) above.

(*f*) I think the "Standard Method" could be simplified, but I would do this merely by reducing the number of "labour only" and "extra labour" items.

(*g*) I fail to see that the system "Quantities not forming part of the contract" has any advantage over the normal system or "Drawings and specification" system.

(*h*) Finally, I would be very interested to hear how the Americans deal with complicated alteration jobs. I also gather from a colleague of mine with experience in America that the settlement of accounts out there can be protracted.

J. B. LATHAM, A.R.I.C.S.

18, Wheatsheaf-close,
Woking, Surrey.

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TO THE EDITOR OF *The Builder*.

SIR,—The article by Mr. Forster in your issue of December 8 demands an answer, if merely to counteract the impression it would leave in the minds of readers not fully conversant with the advantages of the present system of the use of bills of quantities.

Mr. Forster is an M.I.O.B., but it is obvious from his article that he is not fully conversant with the information an estimator would need. It is difficult to imagine how an estimator could calculate what to allow on 1,000 bricks for arches and soldier courses, or how he could price planking and

strutting in yards cube, or allow in a price per cwt., for an undefined amount of stepped lead flashings. In my humble opinion, it is not an answer to the question to make estimating an intelligent gamble as is evidently done in America, if paragraph 7, page 26, of the Productivity Team report is to be believed.

The Code of Measurement, of course, is an acknowledgment of the fact that housing, of the council house type, is a specialist work for which the relations of the various labours to each other bear fairly constant proportions.

The time factor in preparing a detailed bill of quantities seems to be the grouse, Surely the answer is that the time taken must be that to the industry as a whole. It is stated in the report that, in America, the general contractor on most jobs will do the excavating, concreting, bricklaying and carpentry; all other work is sub-contracted, for which up to 500 postcards may be sent and each sub-contractor will have a copy of the drawings and specification. (Paras. 2 and 3 of page 26 of the Report.) Surely this is enough evidence of the wasted effort in the industry. Again each main contractor and sub-contractor must have an estimating and surveying staff able to cope with the taking-off of presumably the same number of jobs that a British contractor receives bills of quantities. This has to be covered in the prices and must increase the cost of building work.

It would be interesting to have the reactions of a client—whether he would rather pay a quantity surveyor 2½ per cent. on work up to £10,000 and 2 per cent. on work above, knowing that the contractor is only going to price a known quantity of work and that in competition the profit is definitely limited; or whether he would rather pay for a watertight contract specification with the builder adding 5 per cent. and measuring full to cover any mistakes. (Para. 7, page 26, of the Report.)

I believe it is often the case in America that time is the all-deciding factor and the bonuses are paid for completion under a specified period. In these cases the bonus influences the cost of the job and not the quantities. This has occurred in this country with such work as cinema or shop building where even one week saved means hundreds of pounds to the client.

With the present system in Britain it is still possible to settle any variation "before a tool is lifted" and final accounts need only be an adjustment of the P.C. and provisional sums in the bill; a relatively simple matter. The solution here is in the hands of the architect and the client.

It is my opinion that Mr. Forster's suggestion is a definite retrograde step, and would propose that the opinion of the competent estimators in the country be obtained before any attempt is made to simplify the S.M.M.

F. C. GEAR, A.R.I.C.S.

45, Westwood-road,
Southampton.

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TO THE EDITOR OF *The Builder*.

SIR,—The article by Mr. T. Forster, published in your issue of December 8, contains many interesting suggestions for condensing bills of quantities to an extent even greater than that envisaged by the Code for Small Dwelling Houses.

Mr. Forster's objects in recommending an overall reduction in the intricacy of bills of quantities are most laudable, having regard to the desirability of reducing pre-contract delay, and many of his suggestions, such as the use of words like "backfill" and reference to British Standard Specifications, Codes of Practice, etc., are acceptable to, and indeed already in use by, a number of quantity surveyors.

Pre-contract delay can be reduced considerably by using approximate bills of quantities for tendering purposes, followed by contract bills of quantities prepared during the erection of the project. This practice is one sometimes adopted for urgent contracts, especially where the design follows closely that of a previous building.

But experience in the use of abridged bills of quantities (not only those prepared under the Code) compels me to utter a warning. Whenever it has been my misfortune to adjust the variations upon a bill prepared other than in scientific and minute detail according to the S.S.M., I have encountered innumerable arguments with contractors over matters of interpretation.

Whilst many contractors would be prepared to tender on bills of quantities abridged as suggested by Mr. Forster, the frailties of human nature are such that, even when the meaning of an overall description is perfectly clear, they cannot resist turning the slightest looseness of an overall description to their own advantage when negotiating prices for extras.

It may be that Mr. Forster has lost sight of the fact that, under the R.I.B.A. Form of Contract, the bill of quantities becomes an integral part of an intricate legal contract involving large sums of money, and I cannot believe that Mr. Forster would seriously want to abridge the meticulously careful wording of a legal instrument which may have to be referred to in a legal action or arbitration. The modern bill of quantities, in its present form, has evolved over a long period and the S.M.M. is revised at intervals to keep abreast with modern trends and to correct difficulties which may have arisen out of an inadvertent ambiguity in previous editions.

During the last war, I had the interesting experience of acting as a quantity surveyor in Palestine. It was there alleged that local Arab and Jewish contractors were not educated up to the use of detailed bills of quantities and an abridged standard method was, therefore, adopted to simplify the procedure. This worked admirably for the purpose of obtaining tenders; but, when the time came to adjust variations, it was found that the standards of education among contractors had suddenly improved and a knowledge of the latest Standard Method of Measurement was used to further claims for extras. One ingenious contractor, armed with a huge volume of the Oxford dictionary, even spent two hours of argument and sent a number of strangely-worded letters to convince me that the words "or similar" meant "precisely the same in all respects," and when I pleaded common English usage he informed me that his native tongue was not English and the Oxford dictionary was the highest authority on the English language and I must, therefore, abide by it!

N. A. FRASER.

43, Wellington-square, Hastings.

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## OFFICIAL NOTIFICATIONS

### Imported Copper Supplies

The Ministry of Supply announces that from January 1, 1951, until further notice, supplies of imported virgin copper to consumers will be restricted to a total each month equal to their average monthly consumption in the first half of 1950. Individual quotas will be notified to consumers without delay by the Directorate of Non-Ferrous Metals, Rugby. The quota for each consumer will be based on the returns of consumption of imported virgin copper made to the Bureau of Non-Ferrous Metal Statistics.

Consumers of imported electrolytic copper in special shapes and to special specification, for instance vertically cast wire bars or 1,000-lb. vertically cast cakes, will be restricted to a monthly quota of two-thirds of their average monthly consumption of these shapes in the first half of 1950. The short delivery of one-third of special shapes may be made up, if the consumer so desires, by deliveries of standard shapes, subject to the overall limitation on supplies notified above. No further delivery contracts will be made until the quotas have been notified. The Ministry will accept orders for delivery subsequent to the month of order only for a tonnage which does not exceed two-thirds of the quota notified.

### Iron and Steel Prices Amended

A new Order amending maximum prices for a limited range of iron and steel products, the principal of which is terneplate, has been made by the Minister of Supply. The Order, the Iron and Steel Prices (No. 5) Order, 1950, came into operation on December 14. Copies are available from H.M. Stationery Office or through any bookseller.

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### International Welding Congress

An International Welding Congress is meeting in London and Oxford from July 14—21 next. The Secretary is the Secretary-General of the International Institute of Welding, Mr. G. Parsloe, 2, Buckingham Palace-gardens, London, S.W.1.

# PLANTING DESIGN

## A Paper by Miss Brenda Colvin, F.I.L.A.

THE part played by light and shadow was one of the many aspects of planting design which were pointed out by MISS BRENDA COLVIN, F.I.L.A., when she read a paper on this subject at the Institute of Landscape Architects on December 14. We take the following extracts from her remarks:—

Just as the architect determines the shapes and sizes of courts, halls and rooms and passages for various purposes and encloses these within walls, so we have to determine the shapes and sizes of open spaces to suit various special needs, and the type and degree of enclosure for each. We plan the connections, the circulation and the flow between separate open spaces. The shapes are freer, the whole movement more flowing and less enclosed than in buildings, even in plan, yet in varying degree there is always the need for some sense of enclosure usually to be provided by planting. On a really large scale what else could be used? No wall can be such an effective screen against wind and smoke as a tall belt of trees, nor be so happily in scale with open acres of ground.

One of the purposes of planting design is to prevent everything from being seen at a glance. Rather to concentrate appreciation on one theme at a time and to refine our delight by timing each view to appear in sequence.

Whether in the small garden, or the wider landscape, there is always the need for linking together not only the open spaces but also the material of the enclosures to produce a nicely balanced, interlocking, pattern of open space and plant masses. The large plant masses and the open spaces are, respectively, the solid and the void of landscape composition.

In almost any old English village or small town which has grown slowly, this need for linking things together has made itself felt and has been met through the ages, so that we get strong lines of hedges, and tree groups serving as shelter, boundaries, and screens, tying the buildings together and linking them to the landscape beyond. Such a settlement looks well-rooted in the soil; as if an earthquake, though it might break the pattern, could never dislodge the pieces.

### New Town Development

In new developments such as a new town, the same effect should be sought, first by using existing tree groups, woodland and hedges, so far as they can be preserved, as links in the chain between natural landscape and the "man-made"—the general lines of linkage being chosen to suit the requirements of the master plan. Then these general lines can be strengthened by new plantings, following the same general direction but designed to provide wind shelter, greenways and boundaries. Even through housing areas or other dense types of built-up land, individual trees or small groups can be used to give some degree of continuity maintaining some contact, as it were, between larger groups in parks or woodlands beyond.

In this way one gets two distinct themes intertwined—a network of living plants keyed into the architectural pattern, the green network binding buildings and roads to the landscape beyond, as well as linking each individual building or group of buildings to its own open space.

The agricultural pattern beyond the towns gives continuity of this green network wherever the hedges and hedgerow trees have been retained. The sight of trees and hedges being rooted out for the sake of the tractor over large areas of arable land is, for me, like seeing the breakdown of the cell walls in living plant tissue. If the need for wind shelter leads to new tree planting before loss of fertility sets in, the change in the landscape of such areas may not be for the worse. Tree belts sited in relation to wind direction and ground form can have beautiful and exciting lines and become an adornment to any landscape.

I do not believe we can separate purely visual aspects of planting design from the practical purposes served by the plants because the visual and emotional pleasure we receive depends so fundamentally on how the plants are used. The eye responds before all else to balanced composition or relationship between plant masses and open spaces which, in the civilised landscape, are largely the outcome of our day-to-day needs for various land uses and for shelter and enclosure. Where the distribution of plant masses and open space is satisfactory, then the secondary relationships between the plants themselves come into the picture and can be appreciated as the finer points of the composition.

Plant groups used as part of the essential structure provide ample scope for sensitive detail, and they also give opportunity for those very broad effects which are such an exciting element of landscape design. Probably many of you here to-day know that wonderful belt of scarlet willows on the Longford estate near Salisbury, binding the banks of the Ebble? It brightens the valley scenery in winter for the whole neighbourhood. That is a case where no mixture could have been half so effective as the broad massing of a single species. Yet near by there are yew woods on the chalk downs whose beauty is enhanced by the sprinkling of whitebeams along the fringe. The best season for seeing this is when the silver buds of the whitebeam begin to open in spring—but the pale under-sides of the whitebeam leaves in summer and the berries in autumn all benefit from the background of dark yew crowning the long ridge of the hills.

Nature's grouping is often—usually, in fact—very broad, yet not so broad as to produce a sense of monotony. Ecological factors ensure a variety beautifully in scale with the shapes of the ground, so that every change in the lie of the land is emphasised by changes of vegetation. In the valley bed, long ribbons of a dominant tree mark the watercourses in contrast to something different on drier ground on either hand. This in turn is seen against further changes of vegetation where the slope gets steep and so the whole valley contours are mapped out. A geological fault, an outcrop of different rock, or a change of aspect will give rise to further changes and variety in the vegetation. Natural grouping has a meaning, in this way, related to land forms and climate. Whether or not the human mind grasps the meaning, the eye appreciates the sense-of-meaning-and-purpose in the visible variety. The untrained eye may regard some types of natural woodland as a haphazard mixture, though it is not really haphazard: the apparent mixtures are limited and interdependent associations or groups will contrast with neighbouring groups resulting from different local conditions.

### Effects of Economy

Man-made plantations on the largest scale are necessarily economic, and for the sake of short-term economy it has been easy to override the more subtle indications of ecology—particularly in the case of forestry. Yet on that scale, variety related to soil and land forms is one which would be difficult to improve upon visually, and one would like to think that long-term economy may, in time, force upon us the need for emphasising through variety in forest planting, the variety latent in the land forms.

When the landscape architect has the chance of large-scale planting, it may be necessary to think in terms of timber production if only because economic woodland has a better chance of long survival and proper maintenance than plantations designed purely for some special purpose, such as wind shelter or screen. Even without keeping to native trees, local ecology and the lie of the land can provide a key to variety in the design on the largest scale.

Coming down to smaller scale planting, the changes in colour, form and texture may need to be rung more often than the land forms indicate, and the scale of the grouping will be reduced. Timber production may still be important and this does not rule out many opportunities for grouping pale hardwoods with an accompaniment of conifers or other interesting effects. There are some magnificent tree belts on the Norfolk coast where oak is seen at its best against dark pine woods. Black Italian poplar, whose timber is in much demand, gives a range of apricot pink in spring after other leaves have acquired a deeper tone. In suitable soil sweet chestnut, so valuable for its timber, is to my mind, one of the loveliest of trees, for the sculptural quality of its bark and foliage, and the colour of the tree in flower.

THE
EIGHTEENTH EXAMINATION
OF THE
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ROYAL INSTITUTE OF BRITISH ARCHITECTS
66 PORTLAND PLACE, LONDON, W.1
*on the following dates:*

*Part* I *(Preliminary)* 3rd & 5th April, 1951
,, I ,, 25th & 27th Sept., 1951
,, II *(Final)* 4th, 5th & 7th April, 1951
,, II ,, 26th, 27th & 29th Sept., 1951

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### Light and Shadow

A brilliantly lit group seen against deep shadow, or a shaded group seen against the light, stirs the emotions beyond our understanding. We cannot rely much on full sunlight in this country, but even the diffused light gives these effects. How different the sculpture seen in Battersea Park appeared by comparison with our memory of it indoors. How difficult it is to foresee what the lighting effects out of doors will be.

In this country too little use is made of foliage form except in waterside plantings, where broad-leaved species are the recognised accompaniment to those having sword-like leaves of iris and antholyza. But most of the moisture-loving plants endure shade well, and if given artificial irrigation in the form of perforated pipes or other device, they can be used in shady places against north walls and between buildings where little else would thrive. Large plant boxes or beds built in as part of the courts and terraces can accommodate them in positions where they will provide the perfect foil to plain wall surfaces and paving. Against the smooth texture of clipped box or yew they can be equally fine.

Appreciation of form and texture in plant groups remains at a low ebb while the partnership of double pink thorn, laburnum and lilac is almost a hall-mark of the garden suburb; and the landscape architect is hampered by a dislike of the unfamiliar which can only gradually be overcome. The term "colour-scheme" is often taken to apply to flower colour alone, green designs being thereby excluded, and the British taste for masses of colour in the planting has developed at the expense of other aspects of design.

If to-day I have stressed foliage rather than flower associations, it is because I feel that it is our special task, as landscape architects, to restore a more balanced attitude in planting design, both in the garden and in the wider landscape.

## CEMENT AND BRICKS

### Plans for Increased Production in 1951

THE Ministry of Works, in response to an inquiry by a representative of *The Builder*, state that cement production in 1951 is to be stepped up by an extra 500,000 tons. New plants will commence to produce and there will be full production both from these new works and from extensions which were under way in 1950. The export programme is being examined with a view to ensuring the necessary home market supplies.

As to bricks, the output in 1950 showed a substantial rise over 1949, and this trend is expected to continue. In addition, the Government Departments concerned, in direct consultation with the brick industry, are commencing a campaign to augment the labour force in the brickyards up and down the country with a view to securing a substantial increase in production.

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As a result of discussions between a Swedish trade delegation and the Board of Trade, U.K. imports from Sweden in 1951 are expected to include substantial quantities of timber, pulp, paper, iron ore and other raw materials.

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### Builders' Foremen's Provident Fund

The London Master Builders' Association has sent a donation of 20 guineas to the Provident Institution of Builders' Foremen and Clerks of Works.

## NEWS IN BRIEF

### London Brick Chairmanship

The London Brick Company announces that Sir P. Malcolm Stewart has resigned from the chairmanship of the board and as a managing director of the company. Mr. A. T. Worboys, who has been deputy chairman since 1937, has been appointed chairman, with Mr. C. W. D. Rowe, a managing director, as deputy chairman.

### Employment in Building

According to the latest employment figures for Great Britain issued by the Ministry of Labour and National Service, the number estimated to be employed in building and contracting showed no appreciable change during October, the figure at the end of that month being 1,496,000—one thousand more than at the end of September.

### Rotherham Housing

Some people at Rotherham, Lancs, who have been seeking houses, have been writing to the Housing Manager offering money if they were allotted houses, and one of the writers enclosed banknotes. They have now been warned by the chairman of the Housing Committee (Ald. F. Harper) that if anything like this occurs again proceedings would be instituted immediately. "The Council will not stand for an attempt to bribe officials," he said.

### Specialists and Sub-Contractors

At the annual meeting of the Federation of Associations of Specialists and Sub-Contractors held at the Savoy Hotel, on December 6, Mr. D. H. Green, O.B.E., B.Sc., M.Inst.C.E., M.I.Struct.E., was elected president for the ensuing year. At the same time the meeting passed a resolution of thanks to Mr. W. R. Cowen, M.R.San.I., M.I.H.V.E., the retiring president, for the untiring service he had given to the Federation during his two preceding years of office.

*FOR EARLY ISSUE—*

ESTIMATING
FOR
BUILDINGS AND PUBLIC WORKS

*11th Edition (Revised August, 1945)*
*9th Impression (December, 1950), including supplements concerning Post-war Labour Costs, dated November, 1948.*

By **B. PRICE DAVIES**, F.R.I.C.S., F.R.I.B.A., F.A.Surv.I., M.I.P.A., M.I.Mun.E. Four times gold medallist for authorship.

It is the Standard Work on the subject, and this new issue is a **Modern Encyclopedia of Estimating**, compacted within one volume. The estimating data have been brought up to date, and now include items of special value for Post-war Housing. The data are unaffected by market fluctuations or locality and provide information for ordering materials and compiling **Works Progress Charts.**

Descriptive leaflet on application.

Price of the 9th Impression of the 11th Edition — **32/6** post free.

Other books still available by the same Author:

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**Western Mail & Echo, Ltd., St. Mary St., Cardiff, Great Britain.**

### Clay Brickmaking in Britain

A new paper in the series prepared on behalf of the Technical Committee of the National Brick Advisory Council has been published for the Ministry of Works. It is No. VI, "Clay Brickmaking in Great Britain—A Survey of the Methods Used," by A. Miller, B.Sc., A.R.I.B.A., and is obtainable from H.M.S.O., price 3s. Nos. I and II of these papers ("The Getting of Clay" and "Labour Requirements in Brickmaking") were published in 1947, and No. V ("Clay Building Bricks of the United Kingdom") in May of this year. A further paper (No. IV, "The Firing of Common Bricks," by W. Noble, B.Sc., A.R.I.C., and A. T. Green, O.B.E., F.R.I.C., F.Inst.P.) will appear in the near future.

### "Inflexible" Licensing

Mr. W. J. Rendell, who in 1951 enters his 60th year in the service of his company, F. Rendell and Sons, Ltd., Devizes, has written to the Minister of Works to draw attention to the difficulty he is experiencing in obtaining a licence for £250 and half a standard of timber to render weatherproof a house in his possession. This property, he states, was requisitioned and handed back to him in 1949, when he converted part into two flats and was prepared to convert the front portion into two good houses. "The licensing position," he states, "is so inflexible that it is impossible to get a licence for this for some time or even to get a licence to keep out the wet and prevent the spread of dry rot." Not only are houses badly needed, he adds, but men will have to be put off because the severe weather is stopping outside work. The total amount per quarter allowed the licensing authority, which administers 26 parishes, he states, is £1,600, which has to include all works exceeding £100.

The Minister has replied, on November 30, stating that the matter was one for the Ministry of Health, to which the papers were being sent direct. At December 13 nothing had been heard from the Ministry. Meanwhile, deterioration continues and local people still wait for accommodation.

## LICENCES FOR HOUSES

### Suggestion to Health Ministry

"THE present practice of issuing licences for new houses to prospective owners instead of to the building industry is resulting in jerry building, low output and high prices," declared MR. ANDREW STEWART, presiding at the annual general meeting of the National House-Builders Registration Council held in London on December 6.

It was not a question of politics, said Mr. Stewart, but of a practical approach to a production problem. It was only by issuing licences in quantity to the building industry that production could be adequately planned, output speeded up and costs reduced. It was certain also that better building would result because the organised house-building industry was pledged to build up to the standards of the officially sponsored National House-Builders Registration Council.

The Council urged the Minister of Health to give this suggestion his early consideration, pointing out that the Minister's policy of seeing that first needs are first met could equally be secured by making it a condition that houses were only sold or let to those who were recommended by the local authorities from their waiting lists.

# TRADE NEWS

### New Iron Development

Lloyds (Burton), Ltd., iron and steel founders, have just produced a new booklet entitled "Iron Marches On" which proclaims the successful casting of ductile iron at their Burton factory.

### Steel Reinforcement

The service which they offer in the design, supply, bending and fixing of steel reinforcement for reinforced concrete structures is described in a brochure issued by the Rom River Co., Ltd., 3-16, Woburn-place, London, W.C.1.

### Zinc Pigments in Exterior Paints

The Zinc Development Association, Lincoln House, Turl-street, Oxford, have just issued a revised and enlarged edition of "The Use of Zinc Pigments in Exterior Paints," which contains details of a number of recent developments. Copies of this booklet are obtainable from the above address.

### A New Brochure

A brochure entitled "Some Notes on Alloy Steels containing Lead" has been prepared and issued by The United Steel Companies, Ltd., on behalf of their subsidiary company, Samuel Fox and Co., Ltd., and deals with the production of alloy steels made at their works to any standard specification but with the addition of lead.

### New Telpher Hoist

Steels Engineering Products, Ltd., 14, Berkeley-street, W.1, have recently introduced the Coles Telpher Hoist, which comprises a Coles Electric Hoist mounted between an electric travelling trolley and a driver's cab. This unit is claimed to be specially suitable where a high travelling speed is required over uneven ground, an obstructed area, or water, thus preventing the operator following the hoist on foot.

### Building Exhibition, Toronto

The Ontario Association of Architects announce that, barring circumstances beyond their control, an exhibition of building materials and plant will be held again in 1952, and the dates have already been fixed, namely, Friday and Saturday, January 18 and 19, 1952. It will be held at the Royal York Hotel, Toronto, in the same rooms, and the regulations will be similar, as those for next January's exhibition, of which details were given in *The Builder* for November 3. Further details are available from Mr. Peter Cleveland, A.R.I.B.A., 40, Pembridge-road, London, W.11.

### New Large-Capacity Cooker

The Simplex Electric Co., Ltd., of Birmingham, have recently introduced a new large-capacity cooker which they have called the Creda Comet. This cooker, which is of the American or horizontal type, fits in with British Standard Kitchen equipment and is claimed to sell at a price within the average medium income group. The oven is half as large again as most vertical type cookers and is automatically controlled by Credastat. The cooker is fitted with a separate grill chamber and a large capacity warming drawer. The model for the home market is fitted with three boiling plates, and that for export with four. Cookers for both markets can be obtained with or without cupboard space in the base for cooking utensils.

### Electric Heaters Described

The "Creda" range of storage and immersion heaters is fully described in an illustrated catalogue which has been issued by the Simplex Electric Co., Ltd., of Oldbury, Birmingham.

### A New Catalogue

A comprehensive new catalogue issued by The Rawlplug Co., Ltd., lists all the diameters, lengths and prices of Rawlplugs and Rawlbolts and describes many other fixing devices which are made by the company.

### New Style Aluminium Ladders

W. A. Lloyd's Alloys, Ltd., Clyde Works, Union-lane, Droitwich, have recently issued a folder giving details of their full range of aluminium ladders. The company have also introduced a number of new features including a "safety tread" on top and bottom of rungs giving a firm foot grip, and a new type of slide for extending ladders.

### New Cold Caulking Compounds

Cold caulking compounds which, it is claimed, can be used in place of lead in pipe jointing, are now being manufactured by Philplug Products (Wembley), Ltd. These compounds, which are a mixture of cementatious powders and asbestos fibres, have been tested by the Building Research Station, who have proved that they will take a pressure of 1,170 lb. per sq. in. When hydraulic pressure was still further increased it broke the cast-iron pipe, leaving the Philplug joint intact. In addition to this test for destruction, others have been carried out for testing the resistance of the compounds to contraction and expansion, vibration, deflection, low temperatures, heat, bacteria, electrical resistance, hygroscopics, sea water and acids. It is claimed that the compounds not only save time, money and labour, but in many cases can do a better job where lead has failed. It is further claimed that one ton of the compound will caulk as many joints as six tons of lead.


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# THE SCOTTISH BUILDER

### Capital Works, Fife

Fife County Council are at present engaged on capital works totalling £3,277,429. This amount is made up of £2,388,570 for housing; £341,642 for drainage; £345,217 for water supply; £150,000 for education; £10,000 for health and welfare, and miscellaneous £42,000.

Fife County Council agreed to employ private architects to prepare plans for three schools, the value of the work being estimated at £374,000.

### NEW BUILDINGS

**Inverness.**—Dean of Guild Court has granted the following petitions, subject to the necessary licences being obtained from the Department of Health:—Royal Insurance Co., Ltd., for alterations to offices in Queensgate and Academy-st. at a cost of £5,000; Mr. Howard J. Chitty, architect, for the erection of a prefabricated wooden house at Damfield-rd., at a cost of £1,800; Mr. Ian M. R. Hay, extension to "Ravelston," Lodge-rd., at a cost of £250; and to Mr. Harold J. Walker for the erection of a bathroom at 68, Huntly-st., costing £231.

# FUTURE CONSTRUCTION

## PUBLIC APPOINTMENTS

*Full details of Public Appointments open will be found in the Advertisement pages of this and previous issues.*

## CONTRACTS OPEN

For some contracts still open but not included in this list see previous issues. Those with an asterisk are advertised in this number. The dates at the heads of paragraphs are those for the submission of tenders; a dagger (†) denotes closing date for applications; the name and address at the end refer to the person from whom particulars may be obtained.

### BUILDING

**DECEMBER 28.**

***†Newcastle-upon-Tyne Regional Hospital Board.**—Improvements and repairs. (a) West Hartlepool General Hospital, and (b) Aycliffe Hospital, Heighington. E. B. Jenkins, Sec., "Dunira," Osborne-rd., Newcastle. Separate contracts.

**DECEMBER 29.**

***†Birmingham T.C.**—12 houses, Thurlestone-rd., Hummings Farm estate, Longbridge.

***†South Western Regional Hospital Board.**—Alterations and additions to "Parklands," Tyndalls Park-rd., Bristol. Architect to Board, 2, Elton-rd., Clifton, Bristol 8. Dep. £2 2s. Tenders by January 29.

***†South Western Regional Hospital Board.**—Alterations to "The Grange," Woodland-rd., Bristol 8. F. W. Wills & Sons, architects, 15, Orchard-st., Bristol. Dep. £2 2s. Tenders by January 29.

**DECEMBER 30.**

***†Bristol T.C.**—Maintenance depot. Greystoke-av., Southmead. W. J. Stenner (F.), 29, Berkeley-sq., Clifton 8. Dep. £2 2s.

***†Rowley Regis T.C.**—76 houses, Cox's Farm estate, Twidale. B.E. & S.

***†Worthing T.C.**—School, Marlborough-rd. E. G. Townsend, T.C. Dep. £2 2s.

**JANUARY 1.**

***†Leyton E.C.**—Additional classrooms, Canterbury-rd. and Newport-rd. schools. B.E. & S.

***St. Pancras B.C.**—Demolition and clearance of site of nonconformist chapel, St. Pancras cemetery, High-rd., East Finchley, N.2. C. S. Bambridge, B.E. & S. Dep. £2 2s.

**JANUARY 2.**

***†Enfield U.D.C.**—12 flats, Baker-st. site. P. Lee, E. & S., 7, Little Park-gdns. Tenders by Jan. 19. Dep. £2 2s.

**JANUARY 3.**

***†Dukinfield T.C.**—36 houses, Yew Tree-la. site. Cruickshank & Seward, architects, 16, Princess-st., Manchester 1.

***†Oxfordshire C.C.**—Technical Wing, Banbury College of Further Education. G. R. Hutton (F.), County Architect, 3, Becket-st., Oxford. Tenders by January 31.

**JANUARY 5.**

***†Southgate T.C.**—14 flats, junction of Chelmsford-rd. and Chase-rd., N.14. B.E. & S. Dep. £2 2s.

**JANUARY 6.**

***†Staffs C.C.**—Additions, County Secondary modern school, Stone. A. C. H. Stillman, Architect & S., Green Hall, Lichfield-rd., Stafford. Dep. £2 2s.

***†Staffs C.C.**—Additions, Rowley Hall County Primary school, Rowley Regis, near Birmingham. A. C. H. Stillman, Architect & S., Green Hall, Lichfield-rd., Stafford. Dep. £2 2s.

***†Whitstable U.D.C.**—14 houses and 22 bungalows, Grimshill estate. W. K. Morris, C.

**JANUARY 8.**

***†Denbigh T.C.**—Alterations, etc., Salisbury-pl. H. Jones, T.C. Dept. £5 5s. Tenders by Feb. 6.

***Durham C.C.**—Structural steelwork, Spennymoor secondary grammar technical school. G. R. Clayton (F.), County Architect, Durham.

***Reigate Boro'.**—Replacement of defective stone coping on Town Hall. G. G. Sanderson, B.S.

**JANUARY 9.**

***Flintshire C.C.**—Extensions to Grammar School, Victoria-rd., Mold. W. Griffiths (L.), Deputy County Architect, Mold. Dep. £4 4s.

**JANUARY 10.**

***Kidderminster T.C.**—First portion depot, Hoobrook. J. G. Stewart, B.E. & S., 110, Mill-st. Dep. £2 2s.

**JANUARY 11.**

***Hythe Boro'.**—30 Beach Chalets, Marine Parade. K. C. A. Ashby, B.S Dep. £2 2s.

**JANUARY 12.**

***Harrow U.D.C.**—24 flats at Kenton-rd. E. & S., Council Offices, Stanmore. Dep. £2 2s.

**JANUARY 15.**

***Birkenhead C.B.**—22 houses, Mount estate. Boro' A., 1, Mortimer-st.

***Carlton U.D.C.**—40 flats, Valley-rd. site. J. R. Campbell, E. & S. Dep. £2 2s.

***Kidderminster T.C.**—22 houses, Birchen Coppice estate. J. G Stewart, B.E. & S. Dep. £2 2s.

***Lincoln City.**—Rebuilding 34, 36 and 38, Avondale-st. City A. Dep. £2 2s.

***Lincoln City.**—Six shops and six maisonettes, Hartsholme estate. City A. Dep. £2 2s.

***West Riding C.C.**—Adaptation of Harewood Bridge House residential special school and extensions to Ecclesfield Monteney-crescent infants' school. County A., "Bishopgarth," Westfield-rd., Wakefield. Dep. £2 2s. each.

**JANUARY 16.**

***Skegness U.D.C.**—38 houses, St. Clement's housing estate. S. Dep. £3 3s.

**JANUARY 19.**

***Carlisle City.**—90 houses, Harraby. City E., 18, Fisher-st. Dep. £2 2s.

***West Riding Standing Joint Committee.**—Police houses, etc., on various sites. County A., "Bishopgarth," Westfield-rd., Wakefield. Dep. £2 2s.

**JANUARY 22.**

***Ealing Boro'.**—Tennis Courts Pavilion, Lammas Park Enclosure. C. W. Seddon, B.E.S. Dep., £2.

**JANUARY 24.**

***Gosport Boro.**—89 houses, Rowner estate. B.E. Dep. £2 2s.

**JANUARY 26.**

***Scarborough T.C.**—36 houses, Eastfield. H. V. Overfield, B. & Water E. Dep. £2 2s.

**FEBRUARY 1.**

***Darlington C.B.**—Secondary Grammar School for Girls, Hummersknott. Boro' A., Central-bldgs. Dep. £3 3s.

***Salop Standing Joint Committee.**—Alterations and extensions, Divisional Police Headquarters, Shrewsbury. A. G. Chant, County A., Shrewsbury. Dep. £2 2s.

**FEBRUARY 7.**

***Swansea C.B.**—Erection of primary school at West Penlan. Boro' A., Guildhall. Dep. £5 5s.

**NO DATE.**

***†Westmorland C.C.**—Erection of Kirkbarrow infants' school, Kendal. R. H. Crompton (A.), County A., Kendal.

## PAINTING, ELECTRIC LIGHTING, MATERIALS, ETC.

**JANUARY 15.**

***Southport C.B.**—Installation of hot water and low-pressure steam service, etc., Public Abattoirs, Poplar-st. Boro' Architect.

## ROADS, SEWERAGE AND WATER WORKS

**JANUARY 19.**

***Malmesbury R.D.C.**—Site works, Corston. Edwards & Webster, architects, 32, Market-pl., Chippenham. Dep. £ 3 3s.

# GENERAL BUILDING WORK (LONDON)

**Becontree.**—FLATS, SHOPS, MAISONETTES, ETC.—A scheme has been prepared for the lay-out of the Health Park extension of Becontree estate. It comprises 108 flats, eight shops with eight maisonettes over, 123 houses and 14 garages. Est. cost, £381,060.

**Bethnal Green.**—WELFARE CENTRE.—Work on the erection of a maternity and child welfare centre at Peel-gr. (cost, £15,200), for L.C.C. Health Com. is expected to be put in hand by March next.

**Bethnal Green.**—NURSERY EXTENSION. — L.C.C. Health Com. propose putting in hand as early as possible work on a £10,000 extension to the day nursery at University House Settlement, Victoria Park-sq.

**Fulham.**—CAFE BUILDINGS, GYMNASIUM, ETC.—L.C.C. Parks Com. propose erection of café buildings, shelter, children's gymnasium and ancillary buildings on Hurlingham Club's grounds, of which some 20 acres are to be layed out as a public open space.

**Hackney.**—NURSERY.—£14,350 is to be spent by L.C.C. Health Com. on erection of a day nursery at St. John's Rectory, Mare-st. Work to begin by March next.

**Hampstead.**—AMBULANCE STATION.—Erection of a new accident ambulance station at Fleet-rd. (adjacent to North Western Hospital), to cost £11,050, is to begin as early as possible, according to a L.C.C. Health Com. proposal.

**Hampstead.**—WELFARE AND TREATMENT CENTRE.—L.C.C. Health Com. propose putting in hand as soon as possible work on a child welfare and school treatment centre at 3 and 5, Daleham-gdns. Est. cost, £40,200.

**Kensington.**—WELFARE CENTRE, NURSERY, HOSTEL.—L.C.C. Health Com. propose erection of maternity and child welfare centre, day nursery and staff hostel at 25-27, Clarville-gr. and 129-131, Gloucester-rd. Est. cost, £46,900. Work to be put in hand as soon as possible.

**Lambeth.**—FLATS, LAUNDRY, ETC.—Victor Wilkins, F.R.I.B.A., 12, York-bldgs., Adelphi, W.C.2, has prepared a scheme, which L.C.C. Housing Com. have approved, for 108 flats, a laundry and 90 pram sheds at Tate-st. site.

**Lambeth.**—SHOPS AND KIOSKS.—16 lock-up shops and two kiosks are to be erected by L.C.C. T.P. Com. in time for 1951 Festival at the intersection of Waterloo-rd. and York-rd. Est. cost, £26,645.

**Norwood.**—HUTTED PRIMARY SCHOOL.—L.C.C. Ed. Com. has approved a scheme for a hutted primary school to be erected at Crown-la. Est. cost, £32,710. Plans by Architect to the Council.

**Paddington.**—NURSERY.—L.C.C. Health Com. propose to put in hand by March next work on a day nursery at Peech-st., the value of which is estimated at £12,305.

**Paddington.**—NURSERY.—£12,800 is to be spent by L.C.C. Health Com. on erection of a day nursery at 38-46, Westbourne Park-rd. Work to begin as early as possible.

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**Peckham.**—CONVERSION.—L.C.C. Health Com. propose to acquire the Pioneer Health Centre and to carry out conversion work in three stages. First stage includes adaptation of ground floor as day nursery at a cost of £10,800. Plans by Architect to the Council.

**Poplar.**—LAND FOR HOUSING.—L.C.C. Housing Com. propose to acquire for housing purposes a site at Barchester-st. of about 9.5 acres.

**St. Paul's Cray.**—SHOPS, FLATS, MAISONETTES.—L.C.C. Housing Com. propose eight shops, eight maisonettes and six flats in one block at Leith Hill. Est. cost, £44,775.

**Stoke Newington.**—TEMPORARY NURSERY.—Work on the erection of a temporary day nursery at Springdale-rd. (cost, £15,550), for L.C.C. Health Com. is expected to be put in hand by March next.

**Wandsworth.**—FLATS.—12 additional flats are to be provided in the L.C.C.'s extension scheme at Springfield estate. Est. cost, £21,550.

## (PROVINCIAL)

**Border.**—R.D.C. propose 85 houses, Longtown, Irthington, Low Moorhouse, Burgh-by-Sands, Hethersgill, Hayton and Dalston.

**Brandon.**—U.D.C. to erect 78 houses north of Broom-la., Ushaw Moor. Surveyor, J. P. Addison.

**Burnley.**—E.C. approved preliminary plan for St. Hilda's R.C. school.—Appointed Kitson, Parish, Ledgard and Pyman, Leeds, as architects for works at Rosegrove Cty. Jnr. Sch.—Approved plans and estimates at £12,610 for Lionel-st. nursery; £11,430 for Elm-st. nursery and £12,081 for Howard-st. nursery. To invite tenders shortly for new police headquarters and magistrates' courts at Cattle Market site. Architects, Bradshaw, Gass & Hope, 19, Silverwell-st., Bolton.

**Bury and Rossendale.**—Hospital Management Com. propose following schemes in 1951 programme:—New out-patient and casualty dept. (initial work); twin operating theatres; pathological dept.; improvements to staff accommodation, Bury Gen. Hospital; various works at Fairfield Gen. Hospital (£13,270); improvements to chronic sick block and improved accommodation for staff at Rossendale Gen. Hospital; improvements to sanitary annexes and accommodation for staff at Florence Nightingale Hospital at £9,100.

**Caernarvonshire** and Anglesey Hospital Management Com. to acquire 2 properties at Caernarvon and Holyhead for adaptation as nurses' homes. Caernarvon and District Tubercular Subjects Aid and Protection Society propose new building at Bryn Seiont Sanatorium.

**Carlisle.**—E.C. propose extensions for science labs. at Grammar Sch.

**Chester.**—R.D.C. approved new power station, Elton, for B.E.A.

**Chorley.**—P.C. Council of St. James propose conversion of existing school as inf. sch. and erection of new jnr. sch.

**Consett.**—M.H. approved U.D.C.'s plan for 18 houses at Selby Lodge at £16,704.—Council is negotiating for further housing land at Leadgate.

**Criccieth.**—Approved plan for telephone exchange, High-st., for G.P.O.

**Derbyshire.**—C.C. 1951/2 schools programme:—Alfreton Cty. Jnr. (£59,880); Ashbourne, Cty. Sec. (instalment, £44,000); Buxton, Fairfield Cty. Prim. (£41,120); Eckington, Birk Hill Cty. Inf. (£38,000); Heanor, Marlpool Cty. Inf. (£45,160); Ripley Cty. Inf. (£37,800); and Staveley, Inkersall Cty. Prim. (2nd instalment, £12,000).

**Durham.** — Westoe Breweries, Ltd., propose licensed premises on site in Gort-pl. on Sunderland-rd. estate.

**Felling-on-Tyne.**—U.D.C. intends building another 50 traditional houses on Ellen Wilkinson estate and G. Wimpey & Co., Ltd., Orchard House, Jesmond, Newcastle-on-Tyne, have been invited to submit tender.

**Flintshire.**—N.C.B. propose pithead baths and canteen at Point of Ayr Colliery.

**Flintshire.**—C.C. propose new tech. sch. at Kelsterton, Deeside, at £435,043, and sec. sch. at Buckley at £190,502 (1951 programme).

**Garstang.**—R.D.C. approved 12 bungalows for aged at north end of Fairsnape-dr., Kepple-la. estate.

**Golborne.**—U.D.C. surveyor to prepare layout plans for houses at Warrington-rd. and "Mee Brow."

**Golborne.**—U.D.C. propose 30 houses at Culceth.—Approved plans for new headquarters, Charles-st., for British Legion (Golborne branch).

**Hebburn-on-Tyne.** — U.D.C. has discussed with Cty. Planning Officer proposed erection of 16 old people's dwellings, Buchanan-st.

**Holmes Chapel** (Cheshire).—Manchester Reg. Hospital Brd. propose hostel at "Cranage Hall" at £17,000.

**Keighley.**—T.C. to complete initial plans for crematorium, Oakworth.

**Manchester.**—Nurses' home proposed at Victoria Memorial Jewish Hospital. Architect, H. Davies, 79, Mosley-st., Manchester.

**Middlesbrough.**—Middlesbrough Methodist Circuit to submit to T.C. plans for church hall and ancillary buildings at The Greenway, Thorntree. Cost will be about £22,000. Scheme is part of larger project

including Methodist Church to cost £43,000. Efforts are to be made also to obtain a site at Ormesby for a new church.

**Morpeth.**—R.D.C. propose 20 houses at Broomhill, 12 at Hepscott, 6 at Widdrington, and 6 at Hartburn.

**Newcastle-on-Tyne.**—City Council has received sanction to borrow £446,712 for 296 houses and 12 shops and flats on Montagu estate, and 21 houses in Rothley-ave.; £13,804 for 16 old people's houses on Montagu estate; £157,600 for Blakelaw Cty. Sec. Sch.

**Northants.**—C.C. received sanction for extensions to Brackley fire stn.

**Northants.**—E.C. propose following schools in 1951/2 programme:—3-form entry, Moulton; science block (first instalment of new buildings), Kettering Grammar; 2-form entry sec. mod., Towcester; and 3-form entry sec. mod., Duston.

**North Riding.**—C.C. propose adaptation of "Princess Royal Hotel," West Cliff, Whitby, as home for aged, at £10,000.

**Nottingham.**—T.C. seek loan of £10,650 for adaptations at "Fernleigh," Alexandra Park, for old people's home.

**Ormskirk.**—B.C. approved plans for extensions to factory, Mart-la., Burscough, for James Martland, Ltd.

**Padiham.**—U.D.C. seek loan of £8,255 for 8 bungalows, Slade-la. estate.

**Prestcot.**—Plans approved for new Church of St. Matthews, Thatto Heath.

**Preston.**—T.C. propose large extensions to accommodation for attested stock at Auction Mart.

**Salford.**—T.C. approved plans for:—24 flats, Bury-st.; 21, Grosvenor-sq.; and 12, Ladywell estate (1962-53).—Reserve 1951/2 schools programme includes new Salford Grammar, Clarendon Cty. Sec. Mod. (Stage 11) and St. James R.C. infants.

S. Daniels (Greengate), Ltd., propose single-storey clothing factory at Garden-la.—Greengate and Irwell Rubber Co., Ltd., propose 5-storey building for rubber manufacture at Greengate and New Bridge-st.—Olive & Parkington, Ltd., propose rebuilding of works at Lower Broughton-rd.

**Scarborough.**—During 1951-52, Housing and Health Com. to spend £330 000 on construction of 200 houses, public conveniences, etc.—Baker and Clark, York-pl., Scarborough, are architects for rebuilding factory, Melrose-st., for E. T. W. Dennis & Sons, Ltd.—Wilkinson and Smith, Scarborough, are architects for alterations, Clifton-st., for Clarke's Aerated Waters and Bottling Co., Ltd.

**Skelmersdale.**—U.D.C. surveyor to prepare plans for alterations to Town Hall.

**Staffs.**—C.C. to adapt "Erskine Lodge," Newcastle, as children's home, at £10,000.

**Staveley.**—U.D.C. approved plans for inf. and jnr. sch. at Inkersall Green-rd., for C.C.

**Stockport.**—B.C. approved plans for:—Additional floor to warehouse, Kennerley-rd., for Eden Bros.—Extensions at Portwood Foundry, Romiley-st., for J. Needham & Sons, Ltd.—Extensions to assembly shop, Waterloo Engineering Works, Gorsey Mount-st., for Rhodes, Brydon & Youatt, Ltd.—Evangelical Church, Longshut-la., for Elim Pentecostal Church.—R.C. Authorities propose new prim. sch., Houldsworth estate.

**Stoke-on-Trent.**—E.C. seek loan of £58,000 for Meire Lyme-rd. Cty. Prim. Sch.; propose extensions, Longton Tech. College, Longton Sulterland Institute and Burslem Art School at £28,000.

**Sunderland.**—Health Com.'s building programme for next year includes £10,000 for first part of a £50,000 slaughterhouse scheme; £10,000 as first part of plan for health centre at Thorney-cl., to cost £75,000; £8,000 for extending Thompson Park day nursery; and £20,000 for mental health occupational centre and offices.

**Ulverston.**—Manchester Reg. Hospital Bd. propose extensions to maternity block at Oybas House at £28,227.

**Wakefield.**—M.O.T. approved draft plan for central 'bus station for West Riding Automobile Co., Ltd., at £60,000.

**Wallsend.**—Robert Burke, 10, Lambton-rd., Jesmond, Newcastle-on-Tyne, to submit estimates to T.C. for extending Wallsend Civic Hall.

**West Bromwich.**—E.C. received starting dates of June 1 for Yew Tree estate inf. sch. and March 1 for completion of Hamstead prim. Boro' E., H. Schofield.

**Wirksworth.**—U.D.C. received approval of M.O.H. for 20 houses, Derby-rd. estate.

**Wolverhampton.**—Plans have been submitted to B.C. for:—Extensions, including new offices, at Zoar-st., for John Green (Spares), Ltd.—Extensions to machine shop, Woden-rd., for Park Engineering Co., Ltd.—9 houses, Buckingham-rd., for Wm. Whittingham, Ltd., Powlett-st.—Rebuilding of "New Inn," Salop-st., for Wolverhampton and Dudley Breweries, Ltd., Park Brewery, Wolverhampton.—40 houses, Fordhouse-rd., for Nicholls & Jordan, Warley House, Slaney-rd., Bescot, Walsall.

**Wooler (Northumberland).**—Architect for proposed 'bus station and garage for United Automobile Services, Ltd., is A. A. Briggs, F.R.I.B.A., 10, Fleet-st., London, E.C.4. No contracts have been let.

# TENDERS

* Denotes *accepted.*
† Denotes *provisionally accepted.*
‡ Denotes *recommended for acceptance.*
§ Denotes *accepted subject to modification.*
¶ Denotes *accepted by H. M. Government Departments.*

**Ashton-in-Makerfield.**—50 houses at Landgate-la. site, for U.D.C.: *Direct Labour, £60,888.

**Aycliffe Development Corp.**—90 houses at Clarence Farm West, contract No. 33. A. W. Thomas, General Manager, Newton Aycliffe, nr. Darlington: *W. Porteus & Sons, Darlington £15,691 (11); *R. Blackett & Sons, Darlington, £83,246 (60); *Edgar Lawson, Ltd., Darlington £25,262 (19 in "Dri-crete" construction).

**Bingham (Notts).**—14 houses, for R.D.C.: *Frost & Leatherland, Ltd., Dame Agnes-st., Nottingham, £17,230.

**Blyth.**—11 flats at Newsham-rd., for T.C. D. W. Foster, B.E.: *Direct Labour.

**Cannock.**—28 bungalows at Broomhill, for U.D.C.: B. Jones, 100, Market-st., Hednesford, £19,880.

**Ceiciog (Denbighshire).**—8 houses at Pontfadog No. 2 site, for R.D.C.: *D. G. S. Clark, Pontfadog, Wrexham, £11,188.

**Chester.**—Public conveniences at Hamilton-pl., for T.C.: *Wm. Vernon & Son, Ltd., 51, Upper Northgate, Chester, £8,870.

**Droitwich.**—165 houses at northern section of Sledmere housing estate, for B.C.: *J. M. Tate & Sons, Ltd., 25, Highfield-rd., Cradley Heath, £212,954.

**Durham.**—Erection of Grammar Technical School, for C.C. G. R. Clayton, County A., Court-la.: *G. Dougill & Sons, Ltd., Chestnut-st., Darlington, £236,991 (subject to M. of E. approval).

**Felling-on-Tyne.**—Six shops and flats at Ellen Wilkinson estate and two shops and flats at Highlanes estate, for U.D.C. Plans by the Housing A.: *Direct Labour.

**Felling-on-Tyne.**—Further 132 houses at Ellen Wilkinson estate, for U.D.C. Plans by the Housing A.: *Direct Labour.

**Hampstead.**—Works for B.C. 112 flats at Shoot-up Hill housing scheme: *F. Troy & Co., Ltd., 131, Great Suffolk-st., S.E.1, £255,733 (subject to any necessary sanctions); 25 flats at Lawn-rd. housing scheme: *Hubert C. Leach, Ltd., 261, High-st., Waltham Cross, £40,191.

**Hexham.**—Nurses' home at Hexham General Hospital for Newcastle Regional Hospital Board, "Dunira," Osborne-rd., Newcastle-on-Tyne: *T. D. Bird & Co., Hexham, £29,911.

**Ilkeston.**—8 houses, for B.C.: *A. Mason (Contractors), Ltd., Sutton-rd., Mansfield, £10,644.

**Liverpool.**—Alterations and extensions to factory of H. Tramer, Ltd., Edwards-la., Speke: *W. Crosby & Sons, Belle Vale-rd., Gateacre; extensions at Stonebridge-la. Primary School, for E.C.: *Banner Bros., Roby, £25,900.

**L.C.C.**—Contracts exceeding £2,500 in value placed by L.C.C. during period November 7-December 7:—Construction of block of flats, Lilestone estate (Aberdeen-pl. site), St. Marylebone, A. T. Rowley (London), Ltd.; reinstatement of shelter sites and renovations of adjoining areas, north-east district, E. Doe & Sons (Contracts), Ltd.; reinstatement of shelter sites and renovation of adjoining areas in the south-east and south-west districts, Kenman (Contractors), Ltd.; reinstatement of allotment areas, Wadham Lodge Playing Fields, Kenman (Contractors), Ltd.; reinstatement of allotment areas at Fishponds-rd. Playing Fields, E. Doe & Sons (Contracts), Ltd.; provision of electrical installation at Langford-rd. School, S.W.6, E. & C. Champion; provision of electrical installation at Rushmore-rd. School, T. Westcott & Sons; erection of Woodberry Down Comprehensive High School, Tersons, Ltd.; reinstatement after war damage at Woodmansterne-rd. School, E. H. Smith (Croydon), Ltd.

**L.C.C.**—War-damage repairs and improvements at Southwark County Secondary School:

| | |
|---|---|
| A. J. Wait & Co. (Wallington), Ltd., Wallington | £53,910 |
| C. Bryant & Son, Ltd., Westminster | 53,450 |
| Yeomans & Partners, Ltd., St. Marylebone | 53,300 |
| The Demolition & Construction Co., Ltd., Westminster | 53,135 |
| A. Roberts & Co., Ltd., Westminster | 52,962 |
| Lavender McMillan, Ltd., Worcester Park | 52,780 |
| L. & W. Whitehead, Ltd., Wandsworth | 51,734 |
| Whyatt (Builders), Ltd., Wandsworth | 51,527 |
| Truett & Steel, Ltd., Thornton Heath | 49,963 |
| Clarke Barton & Co., Ltd., Sutton | 49,600 |
| H. T. Oliver & Sons, Ltd., Wandsworth | 49,565 |
| J. & J. Dean, Ltd., Leyton | 49,387 |
| J. Garrett & Son, Ltd., Wandsworth | 49,190 |
| Prestige & Co., Ltd., Westminster | 48,931 |
| *J. & C. Bowyer, Ltd., South Norwood | 48,674 |

Comparable estimate of architect in private practice responsible for the work is £47,576.

Occupational reinstatement, repair of war damage, etc., at Olaf-st. depot, Hammersmith:

| | |
|---|---|
| Whyatt (Builders), Ltd., Wandsworth | £27,477 |
| C. P. Roberts & Co., Ltd., Holborn | 26,163 |
| C. Bryant & Son, Ltd., Birmingham | 25,460 |
| J. M. Hill & Sons, Ltd., Wembley | 24,934 |
| Mansfield & Neil, Ltd., E.C.3 | 24,768 |
| John Lewis Building Ltd., Perivale | 24,664 |
| W. H. Gaze & Sons, Ltd., Westminster | 24,557 |
| Yeomans & Partners, Ltd., St. Marylebone | 23,934 |
| Norman Sinclair, Ltd., Ealing | 23,291 |
| *H. Parfitt & Sons, Ltd., Wembley | 22,837 |

Architect's comparable estimate is £24,009.

Construction on the Patmore-st. site, Battersea, of 210 flats in three blocks, partly six and partly five storeys in height, and two three-storey blocks:

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|---|---|
| Prestige & Co., Ltd., Westminster | £390,918 |
| C. F. Kearley, Ltd., Chiswick | 386,742 |
| Lavender, McMillan, Ltd., Worcester Park | 386,101 |
| Halse & Sons, Ltd., Woolwich | 385,370 |
| Rowley Bros., Ltd., Tottenham | 380,244 |
| Kirk & Kirk, Ltd., Wandsworth | 379,464 |
| Harry Neal, Ltd., St. Marylebone | 378,992 |
| Tersons, Ltd., Finsbury | 378,879 |
| Speirs, Ltd., Westminster | 378,128 |
| Gee, Walker & Slater, Ltd., Westminster | 376,350 |
| Taylor Woodrow Construction, Ltd., St. Marylebone | 376,230 |
| Wilson Lovatt & Sons, Ltd., Westminster | 374,853 |
| *Stewart & Partners, Ltd., St. Marylebone | 373,350 |

Comparable estimate of appointed architects, Messrs. de Metz and Birks, is £384,500.

Construction of four blocks of flats and other works at Wimbledon Park Side (No. 1) site, Wandsworth. The rates and prices in the bills of quantities for block 11 and other works (contract A) will be used to value the cost of construction of block 10 (contract B) and blocks 8 and 9 and other work (contract C):

| | |
|---|---|
| E. Clarke & Sons, Ltd., Addlestone | £64,007 |
| Lavender, McMillan, Ltd., Worcester Park | 62,753 |
| John Laing & Son, Ltd., Mill Hill | 61,773 |
| M. J. Gleeson (Contractors), Ltd., North Cheam | 61,366 |
| Henry Boot & Sons, Ltd., Kensington | 58,881 |
| W. H. Gaze & Sons, Ltd., Kingston-upon-Thames | 58,833 |
| Kirk & Kirk, Ltd., Wandsworth | 58,760 |
| Tersons, Ltd., Finsbury | 57,932 |
| A. T. Rowley (London), Ltd., Tottenham | 57,643 |
| Gee, Walker & Slater, Ltd., Westminster | 55,950 |
| E. H. Smith (Croydon), Ltd., Croydon | 55,641 |
| Kent & Sussex Contractors, Ltd., Westminster | 55,424 |
| W. J. Simms, Sons, & Cooke, Ltd., Westminster | 54,862 |
| *Rowley Brothers, Ltd., Tottenham | 54,846 |

Comparable estimate of the architect is £56,430.

**L.C.C.**—County primary school at St. Leonard's-rd., Poplar:—

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|---|---|
| Prestige & Co., Ltd., Westminster | £101,881 |
| A. T. Rowley (London), Ltd., Tottenham | 101,801 |
| Stewart & Partners, Ltd., St. Marylebone | 100,974 |
| F. R. Hipperson & Son, Ltd., Broad Street-pl., E.C.2 | 98,451 |
| J. Garrett & Son, Ltd., Wandsworth | 98,435 |
| C. F. Kearley, Ltd., Chiswick | 96,269 |
| John Laing & Son, Ltd., Mill Hill | 96,192 |
| Lavender, McMillan, Ltd., Worcester Park | 96,134 |
| *Tersons, Ltd., Finsbury | 93,351 |

Architect's comparable estimate is £96,602.

**¶London (Admiralty).**—*Ilchester:* Site works and houses, Basil H. A. Shoemark, 13, Middle-st.,

Montacute, Somerset. *Portsmouth*: Asphalt repairs to roofs, Permanite, Ltd., 455, Old Ford-rd., Bow, London, E.3. *Bedenham, Hants*: Asphalt repairs to roofs, The General Asphalt Co., Ltd., Hope House, Great Peter-st., London, S.W.1.


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**¶London (Air Ministry).**—Contracts to value of £500 or over for week ended December 9:—Building work: F. Shepherd & Son, Ltd., York. Painting work: W. Winstanley & Co., Ltd., Warrington. Resurfacing work: Thaw & Campbell, Ltd., Glasgow. Maintenance work: F. Parkinson & Son, Ltd., Blackpool.

**London (M.O.W.).**—Contracts placed by M.O.W. during week ended December 9.

*London:* Waterloo House, S.E.1, Internal painting, Sykes & Son, Ltd., 8, Essex-st., W.C.2. North-West District Office, 220, Evershed-st., N.W.1, Internal decorations, Decorative Art Guild, Ltd., 43, Lower Belgrave-st., Eaton-sq., S.W.1. Branch Post Office, Streatham Hill-rd., S.W.16, Adaptations, Whyatt (Builders), Ltd., Ravenstone-st., S.W.12. *Cambridgeshire:* T.O.B. Brooklands-av., Cambridge, Interior decorations, Negus & Sons, Ltd., 56, Regent-st., Cambridge.

*Gloucester:* Staverton Bridge Hostel, Staverton, Internal decorations, Priestleys Contracts (Gloucester), Ltd., Vicarage-rd., Gloucester. *Hampshire:* S.R.D.E., Somerford, Christchurch, Internal painting, D. Drake & Son, Ltd., Orchard-st., Bournemouth. *Lancashire:* Fazackerley, Erection of six houses, John Laing & Son, Ltd., Mill Hill, N.W.7.

*Midlothian:* Blackford Hill, Edinburgh, Erection of television relay station, W. Arnott McLeod & Co., Ltd., Russell-rd., Edinburgh. *Northumberland:* Coastguard Station Cottages, Tynemouth, Alterations and extensions, Benjamin Peel, Ltd., East Mill Works, Tynemouth. *Surrey:* Dingwall-rd., Croydon, Erection of Crown buildings, C. H. Gibson, Ltd., 509, London-rd., Thornton Heath. Cox-la., Hook, Erection of clothing depot, G. T. Crouch, Ltd., 3/5, Thames-st., Kingston-on-Thames.

**¶London (War Dept.).**—Works contracts placed by War Dept. for week ended December 9:—

*Breconshire:* Hutting (dismantling and re-erection), C. Price & Son, Abergavenny. *Glamorganshire:* Miscellaneous, J. W. Protheroe & Son, Penarth. *Lancashire:* Miscellaneous, Daniel Cooper, Ltd., Warrington. *Yorkshire:* Building, F. Bilton, Ltd., Hull. *Derbyshire:* Miscellaneous, Harris Bros. (Marehay), Ltd., Ripley. *Midlothian:* Parade ground, etc., J. Crow & Sons, Edinburgh.

*Wiltshire:* Building, Reema Construction, Ltd., Salisbury. *Suffolk:* Roadwork, etc., Rogers Bros., Ltd., Felixstowe. *Sussex:* Miscellaneous, L. F. Richardson, Ltd., Chichester. *Renfrewshire:* Concrete structures, and huts, John Woodrow & Sons (Builders), Ltd., Bridge-of-Weir. *Hampshire:* Roadwork, Allweather Mechanical Grouting Co., Ltd., London, S.W.1; Hutting alterations, T. King & Sons (Bldrs.), Ltd., Andover. *Isle of Wight:* Roadwork, F. Bracey Road, Ltd., Watford, Herts.

*Wiltshire:* Painting, E. J. G. Morgan, Ltd., Trowbridge. *Oxfordshire:* Waterproofing sheds, Bitumen Industries, Ltd., Slough. *Wiltshire:* Painting, Clark & Fenn, Ltd., London, S.W.4. *Hampshire:* Painting, W. T. Pickering & Sons, Ltd., Watford. *Gloucestershire:* Painting, Ben D. Gibbs & Son, Ltd., Newport, Mon. *Wiltshire:* Painting, M. A. Appleton (Contrs.), Ltd., Wolverhampton.

**Newcastle-on-Tyne.**—Erection of Blakelaw Secondary Modern School for Girls. G. Kenyon, City A., 18, Cloth Market, Newcastle: *E. Jeffcock (Contractors), Ltd., 107, New Bridge-st., Newcastle-on-Tyne, £153,794 (lowest tender).

**Newcastle-under-Lyme.**—Houses, for B.C.: 15 at Talke-rd., *R. Dayson, South-ter., Wolstanton, £19,003; 13 at Silverdale Farm, *Phillips Bros., May-st., Silverdale, £16,898; 2 at Moorthorne-cres., *Madew & Wardle, Ltd., Central Works, Market-la., £2,405; 8 at Moorthorne-cres., *Willis Bros., 36, Heath-ave., £10,077.

**Nottingham.**—120 garages at Clifton estate, for T.C.: *G. Wimpey & Co., Ltd., £16,800.

**Notts.**—Erection of Eastwood Brookhill Primary School, for C.C.: *H. Baggaley, Ltd., Mansfield.

**Ormskirk.**—28 houses at Scott-la. estate, for B.C.: *Berry & Hellowell, Ltd., Burscough, £29,807.

**St. Pancras.**—Conversion work at Camden-ter., for B.C.:—

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| G. Mence & Sons ... ... ... ... ... | £11,420 |
| Frank W. Marshall & Co., Ltd. ... ... | 9,997 |
| Building Department ... ... ... ... | 7,855 |
| Rodwell & Sons ... ... ... ... ... | 6,690 |
| F. R. Morgan, Ltd. ... ... ... ... | 6,565 |
| *Goddard & Phillips, Ltd. ... ... ... ... | 6,600 |

**Salford.**—66 flats at Islington-st. and 12 flats at Eccles New-rd., for T.C.: *Unit Construction Co., Ltd., Knutsford, Ches, £96,350 and £17,000.

**Southport.**—Repairs and improvements at the abattoirs, Poplar-st., for B.C.: *F. Buck & Sons, Ltd., 91, Sussex-rd., £6,886.

**Stoke-on-Trent.**—46 houses at Blurton Farm estate, for T.C.: *Direct Labour, £56,739; 18 at Blurton Farm Estate: *Brammer & Co., Ltd., £22,276.

**Upholland.**—12 houses at Mill-la., for U.D.C.: *T. Dickinson & Son, 280, Ormskirk-rd., Holland Moor, Upholland, £14,762.

**Walsall.**—32 houses at Alumwell-rd. and conversion of "The Shrubbery" into home for aged: *F. A. & H. Taylor, Croxstall-rd., Bloxwich, £36,690 and £15,655.

**West Hartlepool.**—Erection of Rift House Primary School, for E.C. Plans by the Borough A., Municipal-bldgs.: *Tarslag, Ltd., Bowesfield-la., Stockton-on-Tees.


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